

# SPECIES KEY FOR MCBEE KEYSORT

Diomedea exulans	Wandering Albatross	3-111
Diomedea albatrus	Short-tailed Albatross	3-112
Diomedea nigripes	Black-footed Albatross	3-114
Diomedea immutabilis	Laysan Albatross	3-117
Fulmarus glacialis	Fulmar	3-120
Puffinus pacificus	Wedge-tailed Shearwater	3-211
Puffinus bulleri	New Zealand Shearwater	3-212
Puffinus griseus	Sooty Shearwater	3-214
Puffinus nativitatus	Christmas Island Shearwater	3-217
Puffinus puffinus	Newells Shearwater	3-221
Puffinus assimilis	Little Shearwater	3-222
Puffinus lherminieri	Audubons Shearwater	3-224
Puffinus tenuirostris	Slender-billed Shearwater	3-227
Pterodroma externa	Juan Fernandex Petrel	3-411
Pterodroma neglecta	Kermadec Petrel	3-412
Pterodroma alba	Phoenix Island Petrel	3-414
Pterodroma ultima		3-417
Pterodroma phaeopygia	Dark-rumped Petrel	3-421
Pterodroma hypoleuca	Bonin Island Petrel	3-422
Pterodroma cooki	Cooks Petrel	3-424
Bulweria bulwerii	Bulwers Petrel	3-710
Nesofregatta albigularis	White-throated Storm Petrel	3-720
Oceanodroma castro	Harcourts Storm Petrel	3-741
Oceanodroma leucorhoa	Leachs Petrel	3-742
Oceanodroma markhami	Sooty Storm Petrel	3-744
Phaethon aethereus	Red-billed Tropicbird	4-111
Phaethon lepturus	White-tailed Tropicbird	4-112
Phaethon rubricauda	Red-tailed Tropicbird	4-114
Sula dactylatra	Blue-faced Booby	4-121
Sula leucogaster	Brown Booby	4-122
Sula sula	Red-footed Booby	4-124
Phalacrocorax pelagicus	Pelagic Cormorant	4-710
Fregata minor	Great Frigatebird	4-141
Fregata ariel	Lesser Frigatebird	4-142
Bubulcus ibis	Cattle Egret	5-111
Casmerodius albus	Common Egret	5-112
Demigretta sacra	Reef Heron	5-114
Nycticorax nycticorax	Black-crowned Night Heron	5-117
Plegadis chihi	White-faced Ibis	5-121
Branta canadensis	Canada Goose	5-141
Branta nigricans	Black Brant	5-142
Philacte canagica	Emperor Goose	5-171
Anser albifrons	White-fronted Goose	5-172
Chen hyperborea	Snow Goose	5-174
Anas platyrhynchos	Mallard	5-211
Anas wyvilliana	Hawaiian Duck	5-212
Anas laysanensis	Laysan Duck	5-214
Anas strepera	Gadwall	5-217
Anas acuta	Pintail	5-221
Anas crecca	Green-winged Teal	5-222
Anas querquedula	Garganey	5-224
Anas discors	Blue-winged Teal	5-227



Mareca penelope	European Widgeon	5-241
Mareca americana	American Widgeon	5-242
Spatula clypeata	Shoveler	5-271
Aythya americana	Redhead	5-411
Aythya collaris	Ring-necked Duck	5-412
Aythya valisneria	Canvasback	5-414X
Aythya marila	Greater Scaup	5-421
Aythya affinis	Lesser Scaup	5-422
Aythya fuligula	Tufted Duck	5-424
Bucephala albeola	Bufflehead	5-711
Clangula hyemalis	Oldsquaw	5-712
Histrionicus histrionicus	Harlequin Duck	5-714
Melanitta perspicillata	Surf Scoter	5-721
Oxyura jamaicensis	Ruddy Duck	5-741
Mergus serrator	Red-breasted Merganser	5-771
Circus cyaneus	Marsh Hawk	6X-111
Pandion haliaetus	Osprey	6X-211
Falco peregrinus	Peregrine Falcon	6-411
Rallus philippensis		7-
Charadrius semipalmatus	Semipalmated Plover	8-111
Charadrius alexandrinus	Snowy Plover	8-112
Charadrius vociferus	Killdeer	8-114
Pluvialis dominica	American Golden Plover	8-121
Squatarola squatarola	Black-bellied Plover	8-141
Arenaria interpres	Ruddy Turnstone	8-171
Capella stenura	Pintail Snipe	8-211
Capella gallinago	Common Snipe	8-212
Numenius phaeopus	Whimbrel	8-221
Numenius tahitiensis	Bristle-thighed Curlew	8-222
Heteroscelus ;incanum	Wandering Tattler	84241
Heteroscelus brevipes		8-242
Totanus melanoleucus	Greater Yellowlegs	8-272
Totanus flavipes	Lesser Yellowlegs	8-271
Calidris canutus	Knot	8-411
Erolia acuminata	Sharp-tailed Sandpiper	8-421
Erolia melanotos	Pectoral Sandpiper	8-422
Erolia fuscicollis	White-rumped Sandpiper	8-424
Erolia alpina	Dunlin	8-427
Limnodromus scolopaceus	Long-billed Dowitcher	8-441
Ereunetes mauri	Western Sandpiper	8-447
Limosa lapponica	Bar-tailed Godwit	8-471=
Tringa glareola	Wood Sandpiper	8-711
Crocethia alba	Sanderling	8-721
Philomachus pugnax	Ruff	8-741
Himantopus mexicanus	Black-necked Stilt	8-771
Phalaropus fulicarius	Red Phalarope	8-772
<del>Phalaropus</del>		
Lobipes lobatus	Nothorn Phalarope	8-774
Steganopus tricolor	Wilson's Phalarope	8-777



<i>Stercorarius pomarinus</i>	Pomarine Jaeger	9-111
<i>Stercorarius longicauda</i>	Long-tailed Jaeger	9-112
<i>Stercorarius parasitica</i>	Parasitic Jager	9-114
<i>Stercorarius (=)Catharacta skua</i>		9-117
<i>Larus hyperboreus</i>	Glaucous Gull	9-211
<i>Larus glaucescens</i>	Glaucous winged Gull	9-212
<i>Larus occidentalis</i>	Western Gull	9-214
<i>Larus argentatus</i>	Herring Gull	9-217
<i>Larus californicus</i>	California Gull	9-221
<i>Larus delawarensis</i>	Ring-billed Gull	9-222
<i>Larus pipixcan</i>	Franklins Gull	9-224
<i>Larus novaehollandiae</i>	Silver Gull	9-227
<i>Larus philadelphia</i>	Bonapartes Gull	9-241
<i>Rissa tridactyla</i>	Black-legged Kittiwake	9-242
<i>Sterna hirundo</i>	Common Tern	9-411
<i>Sterna paradisea</i>	Arctic Tern	9-412
<i>Sterna sumatrana</i>	Black-naped Tern	9-420
<i>Sterna lunata</i>	Gray-backed Tern	9-440
<i>Sterna anaethetus</i>	Brown-winged Tern	9-414
<i>Sterna fuscata</i>	Sooty Tern	9-470
<i>Sterna albifrons</i>	Least Tern	9-417
<i>Thalasseus bergii</i>	Crested Tern	9-710
<i>Procelsterna cerulea</i>	Blue-gray Noddy	9-720
<i>Anous stolidus</i>	Brown Noddy	9-741
<i>Anous minutus</i>	Black Noddy	9-742
<i>Gygis alba</i>	Fairy Tern	9-770
<i>Cyclorhynchus psittacula</i>	Parakeet Auklet	9-140
<i>Fratercula corniculata</i>	Horned Puffin	9-170
<i>Columba livia</i>	Rock Dove	10-111
<i>Vini kuhli</i>		10-211
<i>Asio flammeus</i>	Short-eared Owl	10-411
<i>Tyto alba</i>	Barn Owl	10-421
<i>Eudynamis taitenääs</i>	Long-tailed N.Zealand Cuckoo	10-711
<i>Alauda arvensis</i>	Skylark	13-111
<i>Acrocephalus familiaris</i>	Millerbird	15-111
<i>Conopoderaeaequinotialis</i>	Line Islands Warbler	15-121
<i>Anthus cervinus</i>	Red-throated Pipit	16-111
<i>Aplonis atrifuscus</i>		17-211
<i>Aplonis tabuensis</i>		17-212
<i>Goulehaio carunculata</i>		17-111
<i>Zosterops japonica</i>	Japanese White-eye	17-411
<i>Psittirostra cantans</i>	Laysan Finch	18-111
<i>Serinus canaria</i>	Canary	18-211
<i>Pléctrophenax nivalis</i>	Snow Bunting	18-411
<i>Halycon chloris</i>		11-



R.D. Kirkpatrick

Mc Bee

1964 Journal

Sept. Pacific Ocean

28

Mon

YAG (Yard Auxiliary General) 40  
U.S.S. Hall left Pearl Harbor at  
Honolulu with 5 Pacific Project  
personnel aboard (Gould, Sundell,  
Bratley, Whitman and myself)  
and 2 boys from the Univ. of  
Hawaii (to take oceanographic  
data). Bratley and I share an  
officers cabin but all of us  
except Gould eat in the enlisted  
mess.

I stood the 1st watch, from  
10<sup>PM</sup> to 12 AM with Sundell and  
the 2 to 4 watch with Gould.  
We stand or sit on the helicopter  
landing deck which is a  
raised portion of the ~~fore~~  
fore castle. The sea is  
scanned with sunglasses  
and birds sighted are recorded.  
We saw White Tailed Tropic  
Birds, a Great Frigatebird,  
Brown Boobies, Red-Footed  
Boobies, Wedge Tailed Shear-  
waters, Sooty Shearwaters,  
Sooty Terns, Noddy Terns,  
and Petrels (probably Cooks).

8 PM David Bratley and I were  
asked to leave the Officers Wardroom.



R. D. Kirkpatrick

1964

Journal

Pacific south of Hawaii

Sept.

29

Tues.

Saw relatively few sea birds.

A Golden Plover landed on the helicopter deck where we stand watch and a sailor, Seaman Hamby, killed it with a pellet gun. Gould made it into a skin.

In the evening the Captain and other sailors were fishing off the fantail. They caught a dolphin, a greenish fish, that weighed 14 lbs. and was 2 ft  $\pm$  long.

Sept.

30

Wed

I stood the 6A-8AM, 10 to 12 noon, and 4PM to sundown watch. Relatively few sea birds were seen - Great Frigatebirds, White-Tailed Tropicbirds, a Kamereck (sp) Petrel, etc.

Another Golden Plover landed on the helo deck and again Hamby shot it and Gould made it up.

The sea remains fairly calm (4 to 6 ft waves) and the trade wind blows. It is hot but this is the coolest day of the trip so far. A few flying fishes are observed.



R.D. Kirkpatrick

1964

Journal

Oct. Pacific south of Hawaii

1 Doug Whitman and I stood the  
Thurs 8 to 10 AM watch on the bridge (or  
flying bridge between rain  
squalls). It rained most of the  
morning. We saw 3 flocks  
of terns (Noddy and Sooty). Some  
Petrels were with the flocks.  
The largest flock had 65 birds  
in it.

Bob Sundell and I stood  
the 2 to 4 PM watch. We saw  
3 frigate birds. Our first  
Redtailed Tropicbird of the  
trip flew over. I shot it with  
the 3" magnum 12 ga. goose gun.  
It squawked, feathers flew  
and it circled again. With my  
second shot it dropped into  
the sea. We threw over a smoke  
flare which didn't ignite but  
a dye marker did. We circled  
and a sailor netted the bird  
from the water. It took us about  
45 minutes to retrieve it. Sundell  
and I skinned it.

Bratley shot a Petrel but it  
wasn't recovered.



R. D. Kirkpatrick

1964

Journal

Pacific Ocean south of Hawaii

Oct.

<sup>2</sup>  
Fri.

While standing the 6 AM to 8 A.  
watch with Doug Whitman, a  
Longtailed Jaeger flew over. I  
killed it with the Long Tom  
Goose Gun. It was an immature  
male, the second one ever  
collected in the Central Pacific.

The ship turned from the  
grid and headed for Johnston  
Island with a sailor who has  
a broken arm.

I observed a feeding flock  
of terns, petrels and shear-  
waters feeding on flying  
fish.

Oct.

3

Sat.

At daybreak we stood off  
Johnston Island and transferred  
the injured sailor to a tug that  
took him to Johnston Island.

No new species but I  
observed another Kamarek Petrel.

A sailor shot an immature  
Blue-faced Boobie. We recovered  
it.



R.D. Kirkpatrick

1964

Journal

Oct. Pacific south of Hawaii

4

Sun

I stood the 0000 to 0300 watch -  
no birds but many falling  
stars. The tropical sky and  
sea are really beautiful.

Many sooty terns and Petrels  
in feeding flocks.

AM I wounded a Red-Tailed  
Tropicbird but it didn't come  
down.

PM. I killed an immature  
Masked Boobie with 2 shots  
from a 12 ga. pump. Bratley  
~~skilled~~ skinned it.

Oct.

5

Mon

Oct.

6

Several birds seen but I  
killed none.  
A Redtailed Tropicbird and  
a Great Frigatebird were shot.  
I skinned the Frigatebird. It was  
rather laborious.

Oct.

7

Wed

Practically no birds seen. We  
are at the far corner of the  
grid and are more than 1,000 miles  
SW of Honolulu. Luminescent bacteria  
or plankton is fun to observe  
under the bow at night.



R. D. Kirkpatrick

1964

Journal

Pacific Ocean, south of Hawaii

Oct.

8 I stood my last night watch of the trip from 3 to 6 AM. At 3:30 a sudden squall wet me since I was in the bow.

During the 2 to 4 PM watch, Doug Whitman and I started seeing various birds. I shot 5 times at a Wedgetail Shearwater with the 12 ga Browning Automatic, hitting it 2 times. It went down and the ship circled to pick it up. It flew away as we approached but Pat Gould shot a Golden Plover which was recovered while we were stopped. Whitman and I processed the Plover.

We left the grid and started for Hawaii in the P.M.

Oct

9

Fri.

No birds collected. Several birds were observed, however.

Johnston Atoll was seen from a distance of 8 miles at 1 P.M.



R.D. Kirkpatrick

1964

Journal

Pacific Ocean, south of Hawaii

Oct.

11:50 AM I was on watch and

10

Sat.

noted a Greater Frigatebird circling over an oil slick. As we approached, it was seen that the oil slick was caused by a dead Sperm(?) Whale that was 50 to 70' long. It stunk. 85+ Leach's Storm Petrels were feeding around the whale in the oil slick and many sharks were around the whale. We made 3 passes around the whale but were unable to collect a petrel although I fired several times as did other gunners. An officer shot a shark in the head with an M1 rifle.

Later a Leach's Storm Petrel was shot and recovered.

A Kermadec Petrel flew across the bow 20 ft. from me.

A Masked (Blue-faced) Boobie stayed with the ship for many minutes.



R.D. Kirkpatrick

1964

Journal

Pacific Ocean, south of Hawaii

Oct. 11 Several birds were observed but  
nothing of unusual note.

Sun.

Johnston Atoll, Sand Island

Oct. 18 Arrived on Johnston Island  
at noon. C. Kepler and Dennis  
Stadel came over and picked  
me up and we went to Sand I.  
At dusk we fed 3 Red-tailed  
Tropicbird nestlings that are  
in an old bunker (WWII vintage).

Oct. 19 C. Kepler went to Honolulu, taking  
29 frozen birds with him. They  
included one Japanese White-eye,  
several Great Frigatebirds and  
Sooty Terns.

P.M. Two Ruddy Turnstones (Arenaria  
interpres) were mist-netted, banded and  
released.

The 3 Red-tailed Tropicbird  
nestlings were fed fish.

A Sharp-tailed Sandpiper (?)  
(Erolia acuminata) was collected.

Oct.

20

Tues.

Ran mouse traps. Expanded  
mouse trap grid and put out 21



F.D. Kirkpatrick

1964

Journal

Johnston Atoll, Sand Island

Oct. droppings boards. Collected a  
20 sick Mus.

(cont.) 8:45 PM to 10:30 P.M. Banded  
Wedge-tailed Shearwaters and  
set the 48 mouse traps on the  
grid

Oct. It rained most of the day.

21 1 P.M. to 3 P.M. We fed the 3 young

Wed. Red-tailed Tropicbirds, examined  
the trapped Mus, and weighed and  
measured the young Noddy Terns.

10 P.M. I set the grid mousetraps  
in a steady rain. Trap #49 was  
set on the causeway.

Oct. 8 A.M. We ran the mouse grid traps,

22 ~~the~~ Dennis started taking soil temps.

Thur. I put up Mus RDK #388.

P.M. Dennis and I finished taking  
the soil temps., fed the three young  
Tropicbirds, banded seven young  
Noddy Terns and 3 adult Golden  
Plovers.

We put up a second mist net on  
the beach east of the barracks.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Oct

22

Cont.

10PM We counted Wedge Tail Shearwaters, set Mus traps and banded a Golden Plover caught in the second mist net.

Oct.

23

Fri.

7:30 AM. We ran the mouse traps and made an hourly census of birds perching on guy wires and other roosts.

P.M. The middle size, young Red-tailed Tropic bird was dead. We froze it.

An unidentified duck was seen. I shot it and we froze it. It may be in the genus Anas. A laber said several ducks of the same kind are on Eniwetok so it may be Asiatic.

After dark, several of the Coast Guardsmen started catching sharks from the pier.

Oct.

24

Sat.

8AM We ran the mouse traps then Dennis took soil samples while I made up a mouse skin.

PM I made up another mouse skin.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Oct. 10:30 PM to 12:30 AM We banded 97  
24 Wedge-tail Shearwaters. I set the  
(cont.) mouse traps and Dennis banded an  
Upland Plover caught in a mist net.

Oct. 10 AM We ran the mouse grid then  
25 spent the rest of the day on paperwork,  
Sun. etc.

10 P.M. I set the grid Mus traps.

Oct. AM. We ran the mouse traps, banded a  
26 Golden Plover caught in a mist net, and  
Mon. Dennis shot and recovered an unidentified  
duck.

I made up a Mus skin.

Lt. (jg) Rich Fleming came over from  
Johnston I. He ate dinner with us and we  
showed him around the island. He is a  
zoologist whose father is an oceanographer  
with the Univ. of Wash. Rich is in  
charge of a Naval Oceanographic  
Unit here which is mapping the  
bottom of the lagoon.

P.M. We placed field numbers on the  
frozen birds in the freezer. We threw away  
6 of the Sooty Terns that had little  
data with them.



R.D. Kirkpatrick

1964

Journal

~~Sand Island, Johnston Atoll, Pacific~~

Oct. We tried to feed the yg. Red-tailed  
26 Tropicbird in the WWII gun emplacement  
(cont.) but it was gone - probably flown  
away.

10 PM to Midnight. We banded  
Wedge-tail Shearwaters and baited  
the Mus traps.

Oct. A.M. We ran the Mus traps then walked  
27 around the island checking the birds.

Tues. I made up a Mus.

P.M. I made up a Mus.

10 P.M. I set the Mus grid traps.

Oct. AM Lt. (j.g.) Richard Fleming, USNR,  
28 brought us a small lizard and a

Wed. male Rattus from Johnston Island.

We ran the mouse traps and walked  
around the island. At the high tide  
mark, four holes were found in the  
beach. They were each round and  
about 5 to 6" in diameter. They went  
down 8 to 9" then horizontally for 2'  
to 2½'. Two of the burrows curved  
left and two curved right. The excavated  
sand was piled neatly in a mound 18" to  
24" from the mouth of each burrow.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific Ocean

Oct. 28 There were bird-like tracks from the burrow entrance to the sand pile but (cont.) ~~no~~ tracks left the area and nothing was in the 3 that we tore into. Dennis thinks a crab did it and I think a bird contracted the burrow.

Oct. 29

Thurs. The mouse traps were examined. We counted the birds on North Island. There were 22 Ruddy Turnstones (1 had an orange streamer on it from Sand Is.), 12 ~~Golden~~ Golden Plovers, and 1 Wandering Tattler. North Island has not one spear of vegetation on it.

6PM We banded 4 Common Noddy Tern chicks on Sand Island.

Oct. 30

Fri. 7AM to 1:30PM We censused birds on Johnston Island. L.T. (j.g.) Richard Fleming rode with us on a 3rd bicycle.

Oct. 31

Sat. We censused birds on Sand Island and ran hourly counts of Frigate birds and Red-Footed Boobies.



R.D. Kirkpatrick

1964

Journal

Sand Island Johnston Atoll, Pacific Ocean

Oct. The 1300 count was not made since  
31 the Coast Guardsmen were firing  
(cont.) small arms on the beach.

P.M. The mouse grid lay<sup>B</sup> out  
was modified.

10 P.M. I set the mouse traps.

Nov. 10 A.M. We ran the mouse traps.

1 Noon. I put up a mouse skin.

Sun. 9:30 P.M. I set the mouse traps on the grid.

Nov. The mouse traps were run.

2 Soil air and burrow temperatures  
Mon. were taken at the Wedgetail  
Shearwater burrows.

9:30 to 11:30 P.M. The mouse traps  
were set. We banded 45 Wedgetail  
Shearwaters.

Nov. 8 A.M. We ran the mouse traps.

3 A Red tailed Tropicbird was banded.

Tues. The biweekly census report was  
completed and sent in.

P.M. We cleaned the shotgun  
which is kept on Johnston Island  
and talked to Holmes and Narver  
Co. people who control rats on  
Johnston.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific Ocean

Nov

Midnight. I set the mouse traps  
3 on the grid.

(cont.)

Nov.

4 P.M. We ran the mouse traps and  
weighed and measured the young Noddy  
Wed. Terns.

10 P.M. I set the mouse traps on the grid.

Nov.

5 8 A.M. We ran the mouse traps.  
We collected and pressed 3 specimens  
Thurs. of each of the island plants that we  
did not already have.

We went to Johnston Island and  
picked up 2 Rattus caught for us  
by John Makilan, a Hawaiian who  
is doing rodent control for Holmes  
and Narver, Inc.

10 P.M. I set the mouse traps. We  
banded Wedgetail Shearwaters.

Nov.

6

Fri.

Nov.

7

Sat.

8:30 A.M. We ran the mouse traps.  
The guy wire census was run hourly

We worked on Mus. Young Common  
Noddys and young Wedgetail Shearwaters  
were banded. A Common Noddy from  
North Island was collected and  
frozen.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Nov.

8

We worked on Mus.  
One of the USC 2 dogs killed  
Sun. a young banded Wedgetail Shearwater.

Nov.

9

The Mus activity study was  
continued through the night and  
Mon. day.

Nov.

10

Tues.

The Mus activity study was  
continued.  
Four Wedge Tail Shearwaters were  
caught and placed in cages for tagging  
studies.

Nov.

11

Wed

The Mus activity study was carried  
on until 7:30 AM.  
1 PM The 4 Wedge Tails were tagged and  
released.

The sole remaining Common Noddy  
young was weighed and measured.  
Moth crystals were placed with the stored  
Mus skins.

11 P.M. The grid mouse traps were  
baited and set.

A Common Noddy adult with a  
broken wing had 5 cc. of blood taken.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific Ocean

Nov. 7:30 A.M. The Mus grid traps were run.  
12 We counted the birds on North  
Thurs Island (PMR = Pacific Missile Range).  
Coast Guardsman Joe Brown  
made me a tool for use in the Point-  
Centered Quarter Method of range  
analysis.

Nov. 8 AM The Mus grid traps were run.  
13 We counted the birds on  
Fri. Johnston Island. I talked to  
the Holmes and Narver, Inc. people  
in charge of rodent control.

Nov. Birds on Sand Island were  
14 counted and the guy wire survey  
Sat. was run all day.  
The Mus grid traps were set.

Nov. 9:30 A.M. The Mus traps were run.  
15 The Biweekly report was written.  
Sun 5:30 P.M. Shorebirds were counted  
on Sand Island. 27 Mus traps were set.  
10 P.M. Wedge Tail Shearwaters  
were counted on Sand Island.  
The grid traps were set.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific Ocean

Nov.

16

Mon

The Mus grid was run. The other mouse traps were picked up along with 5 Wedgetail Shearwaters killed by the Coast Guard dog. The mice were autopsied and processed.

Nov.

17

Tue

The Mus grid was run. The Mus in the other traps were autopsied and processed.

10 PM The grid traps were set and 4 Wedgetailed Shearwaters were caught.

Nov.

18

Wed.

8 AM The Mus traps were run. The Wedgetailed Shearwaters were wing-tagged and released.

Mus were autopsied and processed.

Midnight. The grid traps were set. Four adult Wedgetails were caught.

19 Gray-Backed Terns (Sterna lunata) were observed.

Nov.

19

Thur.

The Mus grid traps were run. The four Wedgetailed Shearwaters were wing tagged and released.

The two unidentified ducks and the Sharp-tailed Sandpiper were skinned out and salted down to be sent to Dr. Ely.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Nov. 10 P.M. We set the grid Mus traps and  
19 caught 4 adult Wedge Tailed  
(cont.) Shearwaters.

Nov. The guy wire census was conducted.

20 The Mus grid traps were run and the  
Fri. Wedge Tails were wing-tagged.

11 P.M. The grid traps were set  
and 4 adult Wedge Tails were caught

Nov. The Mus grid traps were run.

21 The Wedge Tails were wing-tagged.

Sat. The birds on Johnston Island  
were censused.

Nov. Wedge Tails caught on 11-21 were  
22 wing-tagged.

Sun. Shorebirds were counted on Sand Island.

Reports were written.

10 P.M. The Wedge Tails were checked  
for the presence of wing-tagged ones,

Nov. The reports were completed and  
23 mailed.

Mon. The Mus grid was altered  
and the traps were set.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Nov.

24

Tues.

A.M. The Mus grid traps were run.

A Short-eared Owl, Asio flammeus was observed.

Vegetation survey of the island, using the Point-Centered Quarter Method, was begun.

11 P.M. Young Wedge-tailed Shearwaters were banded.

Nov.

25

Wed.

A.M. We went to Johnston Island to get drivers licenses.

P.M. Chief Taylor repaired the tool I use in sampling the vegetation.

11:30 P.M. We set the Mus grid traps.

Nov.

26

Thurs.

A.M. The Mus grid was run.

P.M. The mouse traps were set.

Wedge-Tails were banded.

Nov.

27

Fri.

The guy-wire census was conducted.

The Mus traps were run.

A Red-Tailed Tropicbird was banded.

The vegetation survey was completed.

The grid Mus traps were set.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Nov.

8:30 A.M. The Mus grid traps were

28

run.

Sat.

Johnston Island birds were counted.

The Mus traps were set.

Nov.

9 A.M. The Mus grid traps were

29

~~set~~ run.

Sun.

Shorebirds were censused on Sand Island.

Reports were written up.

The Mus traps were set.

Nov.

8:30 <sup>A.M.</sup> The grid traps were set.

30

A yg. Wedge-tailed Shearwater

Mon.

was banded.

Reports were written up.

Dennis Stadel left the atoll on the evening flight.

10 P.M. The Mus traps were set.

Dec.

1

8 A.M. ET 3rd Doyle (Bear) helped me run the mouse grid.

Tues.

The station dog killed at least one Wedge-tail chick.

North Island, Johnston Atoll, Pacific

11 A.M. to 2:30 P.M. I censused the birds on this island, which is called PMR - Pacific Missile Range.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Dec.

1

10:30 P.M. I set the Mus grid traps between rain squalls.

Dec.

2

Wed.

8 A.M. The grid traps were run.  
P.M. I slowly walked the island.  
10:30 P.M. I set the Mus grid traps.

Dec.

3

8 A.M. The grid traps were run.  
Reports were read and island birds there were observed.

10 P.M. The grid traps were set.

Dec.

4

The guypwire census was conducted all day. The grid traps were run and then set at night.

Dec.

5

Sat.

The grid traps were run.  
Red-Tailed Tropicbirds were observed on Johnston Island.  
Rattus, RDK #45103, was thawed and made into a skin.

The grid traps were set.

Dec.

6

Sun.

The grid traps were run.  
Noon. Phil Lehner arrived.  
The grid traps were set.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Dec.

We ran the Mus grid and took

7

blood from a crippled Sooty Tern!

Mon

P.M. We cleaned all the Mus traps and set 25 of them.

Dec.

We ran the Mus traps, autopsied

8

the captured mice, and reset

Tues.

the traps.

Dec.

Same as 12-8-64

9

Wed.

Dec.

We ran the Mus traps and autopsied the captured mice.

10

Thurs.

A short-eared Owl was observed. A perch was constructed for it and was erected.

10 P.M. We searched for Wedge-tailed Shearwaters to band.

Dec.

We ran the guynire census.

11

Fri.

Dec.

A.M. Chief Taylor took us to East Island in the LCVP. We counted 3 Ruddy Turnstones and 5 Golden Plovers.

12

Sat.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Dec. Noon. We went to PMR (North  
12 Island) where we counted 12 Golden  
Leont Plovers, 2 Wandering Tattlers and  
one Ruddy Turnstone.

Dec. We pinned out several Mus skins  
13 for drying.

Sun. We collected a Golden Plover and  
set 25 Mus traps.

Dec. We counted birds on ~~North~~  
14 Johnston Islands.

Mon. We caged the 20 Mus we caught.  
We counted birds on Sand Island.

Dec. We picked up crippled birds and  
15 wrote reports.  
Tues.

Dec. We picked up crippled birds, pinned  
16 out Mus skins to dry and took the  
Wed. S. I. typewriter to Johnston Island  
to be repaired.

Dec. We ran a Mus activity study and  
17 also separated sera from seven  
Thurs. samples of Sooty Tern blood.



R.D. Kirkpatrick

1964

Journal

Sand Island, Johnston Atoll, Pacific

Dec. We continued the Mus activity  
18 study and ran the gerywire census.  
Fri. The S.F. typewriter was returned  
from the Johnston Island Shops.

Dec. A.M. We found 2 Sooty Terns with  
19 broken wings and we took their blood.  
Sat.

Dec. A.M. We found 3 Sooty Terns and  
20 one Common Noddy with broken  
Sun. wings. We took their blood.

Dec. A.M. We found 3 Sooty Terns with  
21 broken wings. We took their blood.  
Mon. P.M. I observed birds.

Dec. A.M. The tide was very high. Water  
22 came to the base of the barracks  
Tues. and went across the causeway,  
partially washing it away.  
We picked up 4 Sooty Terns for  
bleeding.

P.M. We set Mus traps on  
Johnston Island.

We banded a Red-tailed Tropic-  
bird that I found on a nest.



R.D. Kirkpatrick

1964

Journal

Johnston Island, Johnston Atoll, Pacific

Dec. A.M. We ran the Mus traps set on  
23 the island.

(Wed) We picked up crippled Sooty  
Terns on Sand Island.

P.M. We made up 3 Mus skins  
and one Rattus skull.

Dec. We picked up 2 Rattus trapped  
24 by John Makalon.

Dec. Christmas ??  
25

Dec. We ran the guywire census.  
26

Dec. We set the Mus traps for an  
27 activity study.

Sun. We salvaged two Loran tube  
shipping crates as bird holding  
cages.

Dec. We continued the Mus activity  
28 study.

Mon.

Dec. We made up 2 Rattus skins (RDK#  
29 502 and 503).



R.D. Kirkpatrick

1964

Journal

~~Johnston Atoll, Pacific Ocean~~

Dec.

30

We counted birds on Johnston Island.

Dec.

31

We counted shorebirds on North and Sand Islands.  
We set the Mus grid traps.

1965

Jan.

1

We ran the Mus grid traps and did the guywire census.

Jan.

2

We ran the Mus grid traps.

Jan.

3

We ran the Mus grid traps, autopsied Sooty Terns and Common Noddys. We worked on reports.

Jan.

4

We ran the Mus grid traps.

Jan.

5

We ran the Mus grid traps. We bled and autopsied Sooty Terns and Common Noddys.

Jan.

6

We ran the Mus traps; and bled and autopsied Sooty Terns and Common Noddys.



R.D. Kirkpatrick

1965

Journal

Sand Island, Johnston Atoll, Pacific

Jan  
7

We ran the Mus traps.  
I went to Johnston Island and  
arranged to fly to Honolulu on the  
14th. I counted Red-tailed  
Tropicbirds on the island.

Jan.  
8

We ran the geywire survey.  
We set 25 Mus traps.

Jan.  
9

We autopsied Mus and reset  
30 traps.

Jan.  
10

We autopsied Mus and reset  
35 traps.  
A Christmas Island Shearwater  
was observed.

Jan.  
11

We autopsied Mus and packed  
specimens for shipment to  
Washington.

Jan.  
12  
Tues

We autopsied Mus and packed  
specimens for shipment to Washington.

Jan.  
13  
Wed

We shipped the boxes of scientific  
specimens to Washington.  
Binion Amason and Norman  
Heryford arrived.



R.D. Kirkpatrick

1965

Journal  
Hawaiian Islands

Jan. 14 I flew from Johnston Atoll to Hickam  
Thurs Field in a C-124 MATS plane then  
checked in at the Hawaiian King on  
Waikiki where Max Thompson and Doug Parkman were

Jan. 15 I met Bob Banner, Alan Young and  
Fri. Loren somebody at the Univ. of  
Hawaii. A botanist identified a  
grass specimen that I had brought  
from Johnston Atoll as Paspalum  
dilatatum Poir.

Jan. 16 8:30-10:30 A.M. I talked to Dr. Peter  
Sat. Rotar, Agronomy Dept., U. of H., about  
range mgmt. in Hawaii. He told me  
who to see on Maui and Hawaii.

Jan. 17 I flew to Kahului, Maui and  
Sun. rented a car. I drove to Lahaina  
and the Iao Valley. I made an  
appointment to see Gene Cox, SCS  
Area Conservationist, on Monday.

Watched Polynesian girls and  
women dance and sing where I  
stayed all night at the Hukilau  
Hotel in Kahului.

Jan. 18 Talked to Gene Cox then drove to  
Mon. Haleakala Crater in Haleakala National  
Park. Took pictures of range lands,  
cattle and agriculture.



R.D. Kirkpatrick

1965

Journal

Hawaiian Islands

Jan. 18 (cont.) P.M. I talked to Joseph Medaris, Game Biologist for the Hawaiian State Fish and Game.

Flew to Hilo, Hawaii and rented a car and checked into the Hukilau Hotel.

Made an appointment for Tues with Dr. Iyuno, U. of H. Exper. Station in Hilo.

Evening. Watched Polynesian dances and singing by natives.

Jan 19 (Tues) 8 A.M. Talked to Dr. Iyuno who called in Dr. Lloyd Sherrod, Animal Breeding Specialist at the U. of H. Exp. Station who I had known at OSU. Lloyd and I toured their experimental farm where he is using sheep in his forage utilization studies.

P.M. I drove to Akaka Falls State Park where there is a 420 foot waterfall. The Supt., of Portuguese descent (who hates Japanese and is married to a Puerto Rican) commonly sees the Hawaiian bat. I saw a mongoose on the Park and another one when I was



R.D. Kirkpatrick

1965

Journal

Hawaiian Islands

Jan. 19 with L. Lloyd. They are diurnal and apparently abundant.

(cont.) Over night at the Hilo Hukilau where they had excellent Polynesian dancing.

Jan. 20 Went on Beef Breeders Tech. Tour by bus. Viewed cattle and ranges on east and south part of Hawaii on Hawaii Cattle Ranch and smaller ranches. Kikuyu (a Kenya grass) is best forage in high rainfall area (150' to 200'). Eye cancer is a problem and calf crop may only be 60% because of conception difficulties.

Over night in Kona at Hotel King Kamehameha. Excellent hotel, poor Polynesian show.

Jan. 21 The animal breeders and I toured Parker Ranch and the Kamuela U. of H. Exper. Farm. We flew back to Honolulu from Kamuela.



R.D. Kirkpatrick

1965

## Journal

Pacific Ocean south of Oahu

Jan

25

Mon

Last night was spent aboard the ATF Hitchiti, a U.S.N. seagoing tug. At 9:30 AM. we sailed from Pearl Harbor. Six S.I. people were aboard - Max Thompson, Doug Hackman, Larry Huber, Dick Merrill, Paul Woodward and myself.

We observed several Pomarine Jaegers (Stercorarius pomarinus), 6 gulls (Larus spp.), several Sooty Terns (Sterna fuscata), one White-tailed Tropicbird (Phaethon lepturus) and at least three Black-footed Albatross (Diomedea nigripes) besides several Brown Boobies (Sula leucogaster) and Blue-faced Boobies (Sula dactylatra).



R.D. Kirkpatrick

1965

Journal

Howland Island, mid-Pacific

Feb.

1

Mon

8 AM. We sighted the island on schedule after sailing steadily SW day and night from Honolulu for 7 days.

We went to shore with our gear in two trips of the rubber raft. Navy Chief Boatswain's Mate Jim Ingold and an Alaskan Indian coxswain took us in.

We set up 2 tents and a canvas shade at the landing on the west beach near the Amelia Earhart Lighthouse (this is the island she was heading for when she disappeared in the 30's).

Howland Island is approx. 1 mi N to S and  $\frac{1}{2}$  mi E to W with a max elev. of 24 feet. It is coral with herbaceous vegetation (Tribulus, Boerhaavia, Lepturus, Digitaria, Portulaca being the major plants). A few WWII shell holes dot the island and a wrecked WWII B PBY is on the beach near our camp.

Early P.M. We walked completely around the island counting nesting boobies and banding young boobies.

A colony of nesting Sooty Terns is between camp and the lighthouse; another nesting colony is at the SE end of the island.



R.D. Kirkpatrick

1965

Journal

Howland Island, mid-Pacific

Feb.

1

cont.

A large colony of Lesser Frigatebirds is on the E side of the island. The yg. L.F. will soon fly.

A colony of Great Frigatebirds are in some dead trees near the light-house.

Two Red-Tailed Tropicbird nestlings were found. A few Red-footed Boobies are present ~~but~~ <sup>and</sup> are ~~not~~ nesting.

Brown Boobie nests with eggs and with nestlings were found south of camp. Five adult and one nestling Common Noddys are 300 yds. south of camp. Blue-faced Boobies are common and a few Grey-backed Terns are present.

Shorebirds present include (at least) Ruddy Turnstones and Golden Plovers and Wandering Tattlers.

Mammals are probably not present on the island. Signs that look like mice made it seem to be made by the very numerous terrestrial hermit crabs.

Dark until 12:30 AM I banded Sooty Terns.



R.D. Kirkpatrick

1965

Journal

Howland Island, mid-Pacific

Feb. 8 AM. A Navy landing party took  
2 Dick Merrill and the collected blood  
Tues samples back to the ship.

Doug Hackman and I banded and  
put wing tags (a blue one on each  
wing) on 10 nesting Great Frigate-  
birds.

7 PM to Midnight. We banded Sooty  
Terns

Feb. 7 AM We left the island with difficulty.  
3 The surf was so bad that the sailors  
Wed had trouble. When I left the island  
I was on the right rear side of the  
boat, D. Hackman was 3 ft. in front  
of me. The final breaking wave we  
went into threw our loaded raft  
completely clear of the water.  
My nose hit the back of Hackman's  
life jacket and we about flew out of  
the raft. The raft stood up on its stern  
and seemed ready to flip over backward.

Baker Island, mid-Pacific

11:30 AM. The surf was fierce but  
we made it in without serious  
difficulty.



R.D. Kirkpatrick

1965

Journal

Baker Island, mid-Pacific

Feb 3 (cont.) This circular island is about 1 mile in diameter. It is drier than Howland and is only 3 miles north of the Equator. The vegetation is slightly more complex than that of Howland. Sporobolus, a shrub Sida ~~palata~~, 2 spp. of Portulaca, Cynodon, Lepturus are the major plants. Mice (Mus) and a 4" lizard are the only vertebrates other than a few birds (Great Frigatebird, Sooty Tern, Blue-faced Booby, Brown Booby, Red-footed Boobie, Grey-backed Terns).

We set up camp at the edge of a whaler's cemetery containing 20± graves of the 19th century (one is of a Scandinavian ship captain of 1879). North of camp (which is on the west beach) is a light house (not functioning), an mounted ancient cannon (from a whaler??), and a WWII cemetery containing 100± graves with triangular head boards and a rusted infantry helmet marking its location. This was a WWII airbase which made combat runs against the Japanese. Live ammo is found scattered around.



R.D. Kirkpatrick

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Journal

Baker Island, mid-Pacific

Feb. Feral cats had been on this island  
3 until P. Proj. personnel killed them and  
(cont.) Fred Sebley reputedly burned down all  
the buildings because they had  
sheltered cats.

2 PM until 5 PM. We assisted the  
Navy landing party in leaving the  
island. The surf repeatedly swamped  
the boat and threw men out so we  
finally carried the boat and motor  
to the south beach where the surf  
was not quite so bad. It really  
fatigued us trying to launch the  
raft.

5 PM. to dark. We counted  
nesting boobies.

Feb. I made up 3 Mus skins and skulls  
4 and caught several more for examination.

After 9 PM. (after moon set) we all  
worked a Blue-faced Booby club and  
solitary boobies, bleeding them, banding  
them or reading old bands.

Feb. 6 AM. We broke camp and carried the  
5 whole miserable shabang across the  
Fri. island to the south beach where  
the surf was not so bad.



R.D. Kirkpatrick

1965

Journal

Baker Island, mid-Pacific

Feb. Thompson, Merrill and Huber got  
5 off in the first raft with no great.  
(cont.) difficulty. The raft came back  
and Hackman, Woodward, I, and  
3 sailors loaded it with our gear.  
We went out at the wrong moment  
and a wave turned the raft over,  
spilling our gear. Hackman was  
caught under the overturned  
raft until a 2nd wave threw him  
and it farther up the beach. It  
flipped me backwards and I  
looked up thru about 2' or 3' of  
sea water to the sky and saw  
no boat or gear coming at me.  
It was a pleasing sensation to not  
be under the raft. (One of the  
sailors is named Brown and is  
from near Chickasha, Ok. and knew  
L. C. when he lived in Osage Co.).

We righted the boat (rubber raft)  
and collected all our gear except  
a water can and a bird net. The  
motor wouldn't run so we reloaded  
the raft, pushed off at the proper  
moment and rowed out to beyond the  
surf where a second towed us in  
to the ship.



R.D. Kirkpatrick

1965

Journal

Baker Island, mid-Pacific

Feb. 5 (cont.) Chief Bosun Jim Ingold was watching our raft spill from the ship. He said the raft shot straight up out of the water until it cleared the wave, then flipped backwards throwing men and gear in all directions.

Equator, Pacific

Noon. All of us Pollywogs stripped to our skivvies while the Shellbacks set up our initiation. They took us one at a time - ship's officers, then me, then enlisted men. We went forward on the port side from amidships on our hands and knees on the slick deck which had salt water and garbage on it. Shellbacks drove us on with 2 1/2' sections of canvas hose. We crawled around the fore, then aft on the starboard side. One Shellback smeared me with a limburger cheese-like stuff and another hosed me down with sea water. King Neptune's court was set up on the fantail. The King was a big burly 1st class Bosun (a Samoan sailor had already butchered up my hair with clippers at the start of my trek on hands and knees). A Pollywog sailor was strapped at the King's



R.D. Kirkpatrick

1965

Journal

Equator

Feb. feet as his dog and had to keep barking.  
5 The Royal Judge was the Engineering  
(cont.) Officer. His clerk had no charges  
against me so they had me to slither  
under the low bench they were sitting  
on to the "Doctor" who used a catclasp  
container to squirt some vile, hot,  
spicy stuff in my mouth. Then I had  
to kiss the Royal Baby which was  
the bare belly of a Bosun covered  
with a  $\frac{1}{2}$ " layer of black grease.  
From there I went into a big plastic  
swimming pool that was well  
supplied with garbage and sea water.  
A sailor hosed me off with sea water,  
I used a cloth to get the grease out of  
my eyes and my initiation was over.  
(The Court also had a Queen who was  
a sailor with a wig, makeup, brassiere,  
and grass skirt). First initiates  
could belabor the late arrivals  
but I declined since I take no  
pleasure in plaguing people. It  
got progressively rougher as the  
enlisted men came thru since  
it gave the men a break from the  
monotonous shipboard routine.  
The sea was real rough all  
night.



R.D. Kirkpatrick

1965

Journal

Mc Kean Island, mid-Pacific

Feb. The sea was quite rough as we sighted  
6 this island at approx 9 AM but we were  
Sat. able to land without incident.

The island is covered with thousands of birds. Species seen during our survey of the island included Sooty Terns, Gray-backed Terns, Great Frigatebirds, Lesser Frigatebirds, Common Noddys, Blue-Gray Noddys, Blue-faced Boobys, Red-footed Boobys, Brown Boobys, Red-tailed Tropicbirds, Audubon's Shearwaters, Fairy Terns, Hawaiian Noddys. All are nesting or have eggs.

Hackman and I collected ectoparasites and ticks in the P.M.

After dark I banded Sooty Terns until 12:30 A.M. then took pictures of Blue-gray Noddys and Audubon's Shearwaters before showing Paul Woodward where a few Hawaiian Noddys were for him to band.

Our tents and cots were crawling with thousands of ticks. We kept waking to pick them off.

Feb. I caught 50 Sooty Terns for Hackman to  
7 check wing molt on then I collected 3  
Surv. verbeke funnel samples - from: a Brown Booby nest, an Audubon Shearwater nest, a Hawaiian Noddy roost.



R.D. Kirkpatrick

1965

Journal

McKean Island, mid-Pacific

Feb.

7

After dark I banded Sooty Terns until 1:30 AM. Returning to camp we found it literally crawling with thousands of ticks (we were camped in the edge of a large Sooty Tern colony). Most of us moved our cots down to the beach for the rest of the night. I repeatedly woke up, picked off all the ticks I felt crawling, re-rolled up in my sheet and went back to sleep.

Feb.

8

Mon.

We broke camp. I went out in the first boat. We waited in the surf for a long time since the waves were high. Tugging the loaded boat back and forth in the surf was very fatiguing. When we finally shoved off, I was the aft paddler on the starboard side. I was paddling when the first wave hit us. I was washed off the boat but clung to the paddle which was tied to the boat. I hauled myself back to the boat along the paddle cord but about went into the motor prop when the next wave hit. Brown was coxsun. He gave me a hand but had keep working with the motor to keep us headed into the waves. Hackman pulled me aboard.



R.D. Kirkpatrick

1965

## Journal

### Mid-Pacific

Feb.

9

Tues.

We were off ~~the~~ Hull Island at daybreak. It is a British possession (as is McKean). Queen Elizabeth visited the native village there not many years ago. The island is now uninhabited although the coconut groves that provided the basis for the copra production are still there.

We loaded both rafts and headed for a channel that went into the lagoon. However the surf was so high and the landing areas were so shallow and rocky that we gave up our landing attempt since we might have lost our boats (and our lives and our gear, in my opinion). After going into the surf line we went back to the ship and unloaded the rafts.

The ship sailed around to the west side of the island to the old native village. The surf was low so 4 of our party went ashore. Huber and I stayed on the ship and skinned Muss and birds.

Merrill brought back a dog skull, RDK#555, and a domestic cat skull, RDK#556.

In the evening we sailed for Birnie Island.



R. D. Kirkpatrick

1965

Journal

Birnie Island, Phoenix Islands, Pacific Ocean

Feb.

9 A.M. We went ashore with no difficulty.

10

This small British Island is uninhabited

Wed.

and has no growing trees. The dominant vegetation is Boerhavia.

A small enclosed lagoon is present.

The only mammals present are Rattus exulans, the Polynesian rat.

I made up 2 Rattus and collected 17 others for weights and measurements.

Feb.

11

A.M. A hermit crab ate the head from one of my Rattus skins.

Thurs.

Feb.

12

7 A.M. We left Birnie Is. with no difficulty except we sheared a motor pin when the slight surf set us on a rock so we paddled out to the ship.

Fri.

Enderbury Island, Phoenix Islands, Pacific

Noon. We arrived and went ashore without our tents since we stayed in a frame house (built by U.S. in 1939).

This island is 3 miles N to S and 1 mile E to W. Guano was worked from the central lagoon in the 19th century (remains of rock buildings and diggings are north of our camp).

P.M. We took blood from Blue-faced



R.D. Kirkpatrick

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Journal

Enderbury Island, Phoenix Islands, Pacific

Feb. Boobies and Sooty Terns.

12

Feral house cats had been on this island until the S.F. Mngmt. Project killed them "to help the birds". One or more cats may be left here.

Feb.

13

We counted more than 900 Great Frigatebird nests and banded several Red-footed Boobys. These birds were in groves of Messerschmidia and Cordia.

P.M. The USS Hitchite had a beach party at our camp.

We took Red-footed Booby blood (25 samples) and banded Sooty Terns.

Feb.

14

A.M. We banded and put wing streamers on a Great Frigatebird colony east of our Sun camp.

P.M. The ship had another beach party at our camp.

Feb.

15

I went aboard ship to get food for our groups while the last of the ship's crew had a beach party.

Mon.

P.M. We banded Sooty Terns until dark then chased Blue-Faced Boobies with little success since the moon was up.



R.D. Kirkpatrick

1965

Journal

Enderbury Island, Phoenix Islands, Pacific

Feb.

16

Tues.

A.M. Thompson and I walked to the east side of the island to take pictures of Red-Footed Boobies and Great Frigate Birds nesting in a clump of Messerschmidia. We found 3

Red-tailed Tropicbirds resting under the rock ledge that borders a portion of the lagoon.

5 to 6 P.M. We netted and banded Sooty Terns.

Feb.

17

Wed.

7 A.M. We left Enderbury. I went on the first raft. A very large wave (at least 8' high) hit us just after we shoved off. Fortunately we hit it (or vice versa) just before it started breaking. It threw the gear in the bow up in the air and we were thrown off balance but the raft was not upset and nobody fell out.

Canton Island, Phoenix Islands, Pacific

Noon. We went ashore in a whale-boat and stayed until 6:30 P.M., driving  $\frac{1}{2}$  way around the island and netting birds.



R.D. Kirkpatrick

1965

Journal

South Pacific

Feb.

17

(cont.)

Canton Island is a low coral atoll with a circumference of about 21 miles. A very large salt lagoon makes up the center of the atoll. Two channels open into the lagoon which cause a very strong current flowing into the lagoon as the tide rises and vice versa. We went into the lagoon in the whaleboat, while the tide was going down and it took us a long time even with the motor running full ahead. The entrance to the channel was very choppy due to the swirling water.

Canton is administered by the U. S. (where we landed) and by the British. Laborers are Gilbertese who have their wives and children with them and live in house trailers or frame houses. Vegetation is herbaceous or shrubby except where coconut palms and other ornamentals have been planted (and probably watered) around the houses.



R.D. Kirkpatrick

1965

Journal

South Pacific north of Samoa

Feb.

19

Fri

We stood bird counting watches on the flying bridge and shotgun watches in the bow.

Thompson collected one Sooty Tern.

At sunset I finally saw the 'green flash' which is a band of green color around the edge of the sun as it sinks below the watery horizon.

At dusk we passed within sight ( $17\frac{1}{2}$  miles) of the southernmost island of the Tokalan group.

Feb.

20

Sat.

The sea is fairly calm. We passed within sight of Swain's Island. No birds observed in the vicinity of the island.

Tutuila, American Samoa

Feb.

21

Sun.

We tied up in Pago Pago harbor at

9 A.M.

I walked up to the Pago Pago Water Treatment Plant where I photographed the technician, Poloi T. Tivao, Pago Pago, Tutuila. I then walked on up thru the jungle to the



R.D. Kirkpatrick

1965

Journal

Tutuila, American Samoa

Feb. water reservoir, which is far up in  
21 the mountains. On the way there  
(cont.) and back I saw no bats but did  
see Fairy Terns, White-tailed  
Tropicbirds, Samoan Starlings,  
Wattled Honeyeaters, Fruit Pigeons,  
and Swiftlets. Two and possibly  
three kinds of lizards were observed.

P.M. I visited in the home of Jim  
Sewell, Secy. to the Governor.

Feb. I went on a tour of the island in  
22 a bus furnished by the govt. We  
Mon. looked at the many villages and  
observed Banded Rails along the  
road.

Flying Foxes are commonly  
observed flying above Pago Pago  
harbor.

I spent the night in a fale in  
a village past the Rainmaker Hotel.

Feb. Norman Tyler, a TV teacher of science  
23 and I went bat collected in a cave  
Tues. in Mafua village. About 50 bats were  
there. I collected one, RDK #559, on  
the 7th shot without 16 ga.



R.D. Kirkpatrick

1965

Journal

Pago Pago, Tutuila, American Samoa

Feb. 25 8 AM. Norman Tyler brought me 2 medium sized flying foxes (fruit bats) that a Samoan school teacher had killed with a shotgun on Feb. 24. I made a male into skin and skull RDK # 560.

We left Pago Pago and headed north. I was too seasick to put up any more bats after I stood the 12 Noon to 2 P.M. bird watch.

Feb. 26 Tokalan Island

10 AM. We arrived at Fakaofu Atoll.

Feb. 26 Several natives and the chief came out in a boat. They ate aboard ship, then most of the natives (only men came out) sang and danced on the fantail. The native boat took Ensign Rex Alfonso and several sailors ashore and we seven civilians went in with our gear in 2 rafts with Coxswains Harold D. Brown and Winters.

The head men took Alfonso, Thompson and myself to the council fale (fally) which also serves as the school house. Many of the citizens met there. They sat on the floor around the edges and we three sat in chairs behind



R.D. Kirkpatrick

1965

Journal

Tokalan Islands

Feb. enough to be waded.

26 These are the prettiest islands I  
(cont) have ever seen.

An albino native woman about  
60 $\pm$  years old was noted in the village.  
No one lives in the village except  
native Polynesians.

I set 25 Museum Specials baited  
with peanut butter on the small  
island where our fale is located.

One species of rat is supposed to  
be on the atoll. No bats are supposed  
to be here according to the natives.  
No bats were seen at dusk or were observed  
hanging in trees.

11 P.M. The rat traps were run but  
no rodents were seen or caught. Four  
of the 25 traps had been sprung by  
land crabs and/or hermit crabs.

Feb. No rats were in the traps.

27 9 A.M. The 3 natives, other than the  
Sat. chief, took me to the next island  
north and set the 25 rat traps, baited  
with peanut butter. The natives then  
killed a land crab, wove a coconut  
frond basket, cut a Scaevola limb to



R.D. Kirkpatrick

1965

Journal  
Tokalan Island

Feb. sharpen for husking the coconuts, climbed  
27 a tree and threw down coconuts, husked  
(cont.) them and put them and the crab in the  
basket almost as fast I could write  
about it.

1 P.M. No rats in the traps. The  
natives and I rebaited five of the  
traps with coconut meat and moved  
one of the traps to the west end of the  
island.

Our native guides inform me that  
the only mammals present, besides  
humans, are the pig, the dog, the cat,  
and the rat. Chickens are also kept  
by the villagers for meat and eggs.

Dusk. Two natives waited with  
me until full dark then we waded  
to Palea Island. One native used my  
headlight to catch coconut crabs  
and the other carried a coconut frond  
basket to collect the crabs in. The  
crabs were killed by bending their  
heads upward. We then collected  
2 Rattus exulans.

Back at camp I made skins from  
the rats while the natives cooked



R.D. Kirkpatrick

1965

Journal  
Tokelau Islands

Feb. the coconut crabs and several bird bodies  
27 that Thompson and Huber had skinned.  
(cont.) Near midnight they had the meal cooked.  
They had cooked over a fire made of dead coconut  
fronds. Flat stones were placed on the  
bed of coals and the crabs and birds  
had been placed on the rocks.

They asked us to eat with them. I tried  
the coconut crabs (I did not care for  
them). I liked the birds in the following  
order (top to bottom) Bristle-thighed Curlew,  
Hawaiian Noddy, Brown Booby, Lesser Frigate.

The natives liked the Frigates best  
but we did not care for their flavor, possibly  
because we have handled too many  
of the scaly, stinking things.

Feb. We left the atoll without incident.  
28

Sun. Nukunono Atoll, Tokelau Islands

Noon. We arrived at this large atoll  
which consists of 70 low coral islands  
within a reef that is  $8 \pm$  miles in diameter  
(although it is not round).

Approx. 525 Polynesians inhabit this  
atoll. Many of them have Portuguese  
blood in them as a result of blackbirders



R.D. Kirkpatrick

1965

Journal

Nukunono Atoll, Tokelau Islands

Feb. frequenting the Tokelans during the last half  
28 of the 19th century.

(cont.)

All the natives are Roman Catholic. An American nun from Mass. (came to South Pacific in 1933) and a young New Zealand priest are on the atoll.

Sea planes come to the islands 4 or 5 times a year and a ship comes for copra and the excellent weavings of the people 4 times a year.

Unlike Fakaofa Atoll, wells here are salt so the people catch rainwater from some of the rooftops. Fresh coconuts furnish drinking water.

We went with 3 natives in 2 of their boats (powered by our motors) to a fale on an island approx. 8 miles across the lagoon from the village.

Hackman collected insects. Thompson and Huber collected birds. Woodward collected plants. After dark I took the .22 pistol and unsuccessfully hunted for Rattus. I set 5 snaptraps.

Mar.

1

Mar.

No Rattus were in the traps.  
Ambrose (Apollo) Perez, Post Office, Nukunono,  
Tokelau Islands, via Western Samoa,



R.D. Kirkpatrick

1965

Journal

Nukunono Atoll, Tokelau Islands

Mar. and I took rat traps, the .22 pistol, and the  
1 16ga. single in a long boat to another island.  
(cont.) He burnt coconut meat as rat bait and  
we set the traps. We caught skinkes,  
two centipedes and I shot 2 Rattus  
exulans.

P.M. I made up the rat skins (amid  
a swarm of coconut flies).

After dark I helped Hackman catch  
insects.

(The word Tokelau means "tip of  
the Pandanus leaf")

Mar.

2 We went to the village where the  
Priest (a young New Zealander) fed us  
and the village had a dance for us.  
In the dance pale the older men were at  
one end, the young men at the other, and  
the girls were in between. We sat in  
chairs facing them. Each group danced  
separately. Later we twisted with the  
girls for one dance then at the end  
a girl put a lei around each of our  
necks.

We went aboard ship at about 10:30  
P.M. and sailed away.



R.D. Kirkpatrick

1965

Journal

Atafu Atoll, Tokelau Islands

Mar

3

Wed.

Noon. We went ashore at the village and went through a channel into the lagoon. We went across the lagoon in the two rubber rafts with our gear and approx. one dozen natives.

We stopped at a large island. Huber and Merrill shot birds, Hackman collected insects, Woodward collected plants, Thompson collected fish and I collected lizards, geckos and rats (with the aid of a native boy named Feo). We were soaked by a down-pour of rain.

In the evening we went to a small island that had 3 fales on it (where sick natives went to recuperate). We set up camp. After dark, I used the pistol to collect 2 Polynesian rats then I made them into study skins (RDK #566 and RDK 567)

Mar.

4

Thur

I took Feo and a native schoolteacher, Amusia Batea, with me to run the rat traps on the island where we had collected on the 3rd.  
We left the atoll.



R.D. Kirkpatrick

1965

Journal

Tokelau Islands

May

5

These are a group of 3 low coral atolls (or four if Swain's Island is included, as it often is) belonging to New Zealand and inhabited by 1,800± Polynesians and 2 whites (a New Zealand R.C. priest [Marist Order] and a U.S. nun)

The atolls are each made up of numerous islands within an encircling reef. Dominant vegetation includes coconut trees, pandanus and pisonia trees, *Scaevola*, ferns and a salt bush.

Among the birds present are Lesser Frigatebirds, Pacific Pigeons, Hawaiian Noddys, Sooty Terns, Red-footed Boobies, New Zealand Cuckoos, Fairy Terns, Common Noddy, Bristle-thighed Curlew, Black-naped Tern, Ruddy Turnstones, Brown Booby, Reef Heron (white and dark phases), Wandering Tattler, Golden Plover, Sanderling, and Domestic Chickens

Mammals present include only the human, the pig, the dog, the cat, and the Polynesian rat.



R.D. Kirkpatrick

1965 Journal  
Tokelau Islands

Mar 5 Three spp. of reptiles occur (other than marine turtles) - a gecko and 2 lizards.

(cont.) The men are well-built and usually lean. The women are usually well-built but many tend to become obese as they age. The people are the height of the average American or are slightly shorter. They are brown-skinned and have black hair that is straight to wavy but is not kinky. The women wear their hair long but most of the men wear their hair cut in the European style. Most men are clean shaven but a few have mustaches, a few have sideburns and a few have a tuft of hair growing beneath the lower lip or under the chin. A few men, particularly on Nukunono, have a long wide sideburn and are only clean-shaven on the upper lip and beneath a line straight back from the corner of the mouth.

Perhaps this latter style comes from the infusion of Portuguese blood that is most pronounced on Nukunono Atoll.

At least 3 half-caste children were born on Atafu Atoll during WWII when U.S. C.D. were stationed there. Polynesian girls apparently desire half-caste children.



R.D. Kirkpatrick

1965

Journal

Tokelau Islands

Mar.

5

(cont.)

People usually marry between the ages of 14 and 20. Young married couples move into a fale (or whale, as they spell it) occupied by the family of one or the other but usually of the husband. Unmarried men may have sexual relations with unmarried women by secretly going to her at night in her fale. The girl's father and brothers become angry with the suitor if he is discovered (the Nukunono Postmaster told me that he was hit in the head with rocks on Fakaofo when he stumbled and aroused the father and brother when leaving a fale at 3 AM [when the first cock crowed]). Married men may visit unmarried girls, but this is rather unusual. Children are much desired and bearing an illegitimate child casts no stigma on the mother or the child. The Atafu girls were quite open in expressing a desire to sleep with us.

People may live to an advanced age. The oldest person in each village was in their 80's or 90's. The dead are



R.D. Kirkpatrick

1965

## Journal

### Tokelau Islands

Mar. placed in a wooden coffin and are  
5 buried on the same day they die, unless  
(cont.) they die late in the evening. The  
cemeteries on Fakaofo and Atafu  
are on islands near the village but  
the cemetery on Nukunono is near the  
priests house in the village.

The people have forgotten the  
old gods and no longer worship them.  
An old pagan altar or open temple is  
on Fakaofo but I could not learn  
the names of the gods that had been  
worshiped there. All the people are  
now Roman Catholic or protestant  
(London Missionary Society). Fakaofo  
is mainly LMS with some R.C.'s.

Atafu is all LMS and Nukunono is  
all R.C. The Church has attempted  
to alter the sexual habits of the people  
on Nukunono ~~but~~ watching the young  
girls very closely. They appear to  
only be partially successful due to  
the natural inclinations of the girls  
and the absence of effective  
artificial light at night.

A very high percentage of the people  
smoke cigarettes. Both men and women



R.D. Kirkpatrick

1965

## Journal

### Tokelau Islands

Mar. 5 indulge when given an opportunity although the priest, pastors, and teachers discourage (cont) children from smoking. The govt. does not allow the natives to have European beer and liquors and prohibits them from making coconut beer. The natives appear to enjoy alcoholic beverages very much and drink them whenever possible.

The people eat fish (raw and cooked), coconut, pandanus fruit, the roots and fruit of a taro-like plant, pigs, chickens, eggs, ~~and~~ wild birds (particularly the Lesser Frigatebird which they relish. They catch them by climbing trees on dark nights and grabbing them. They net shorebirds), bananas, and coconut crabs.

European foods imported and eaten are restricted to flour, sugar and rice.

A meal was prepared for us on Fakaofo by the natives building a fire of coconut husks and dried fronds. After a bed of coals was attained, clean smooth flat rocks were placed on the coals and ungutted bird bodies and whole coconut crabs were placed on



R.D. Kirkpatrick

1965

## Journal

### Tokelan Islands

Mar the rocks to cook. The food was served  
5 to us from a basket woven from a  
(cont.) coconut frond. Other tree leaves were  
placed in the bottom of the basket to  
retain heat and to keep the food from  
falling thru.

Only Fakaofo has potable fresh  
water wells but even here the water  
is mainly used for washing. The other  
atolls obtain wash water from rain  
barrels and tanks which catch  
water running off the fale roofs.  
The natives drink coconut milk  
instead of water.

Only the men go out to the coconut  
groves to gather copra or go to sea to  
fish. The women clean the fale, take  
care of clothes and children, cook,  
and do handicraft such as weaving  
baskets and mats and fans.

The men wear shorts under a lava  
lava and, sometimes, a shirt or T-shirt.  
The women wear dresses or skirts and  
blouses or a sarong. They are bare  
breasted apparently when palongis are  
not around. Brassieres are a rarity.  
Children may be naked up to the age  
of 4 or 5 years.



R.D. Kirkpatrick

1965

Journal

Jarvis Island, Line Islands, Pacific

Mar.

4PM. We arrived at this desert

7

Sum.

island which is 12 miles south of the Equator. Two narrow channels go thru the reef near the SW corner of the island. The surf was dangerous but we got 2 rafts in without mishap. All 7 sailors went back to the ship in one raft because of the dangerous surf. They made it without mishap even though the motor failed and they had to paddle out.

after dark we banded birds and killed cats.

Birds present include Brown Boobys, Red-footed Boobys, Blue-faced Boobys, Red-tailed Tropicbirds, Sooty Terns, Gray-backed Terns, Wandering Tattlers, Lesser Frigatebirds, Great Frigatebirds.

We stayed in a house that had been erected for International Geophysical Year personnel.

Mar.

11

Thurs

The surf was very high at the landing so we carried our raft and gear to the south side of the island, then waded between the beach and the reef, towing the loaded raft around



R.D. Kirkpatrick

1965

Journal

Jarvis Island, Line Islands

Mar. to the NE part of the island (about 2 miles)

11 to a calmaria where we could cross  
(cont.) the reef. The calmaria had many  
(40+) black-tipped sharks in it. They  
were  $4\frac{1}{2}$  to  $5\frac{1}{2}$ ' long. We got outside  
the reef but the motor failed. A  
raft of Navy people then towed us  
but the sea was very rough and  
we (and they) just about capsized.  
At one point I was thrown out of the  
boat while trying to keep the boats  
together.

At one PM we recrossed the Equator  
heading north.

Christmas Atoll, Line Islands

Mar. We landed with 2 rubber rafts and  
12 a motor whale boat.

Fri. We banded birds on various  
thu islands of this atoll which is  
Mar. reputed to be the largest atoll  
15 in the world. The lagoon is more  
than 10 miles in diameter.



R.D. Kirkpatrick

1965

Journal

Palmyra Atoll, Line Islands

Mar 16 P.M. Five S.I. people (excluding Hackman who stayed aboard ship with an infected leg) and Al Samuelson, the Bishop Museum entomologist, landed and set up camp at the WWII U.S. air base. Bunkers are on many of the islands and there are remains of barbed wire entanglements around each island.

This atoll has a high rainfall causing the vegetation to be very lush. In areas that were undisturbed during WWII, there are very tall Pisonia trees that are 6' + in diameter. Dominant climax vegetation seems to be coconut palm, Pisonia and Scaevola. The old landing strip is being vegetated by Lepturus and other grasses, then Sida (a 2 to 3' tall shrub), then Scaevola and coconut. This plant succession seems to be more rapid than the succession from bare ground to climax in the temperate zone.



R.D. Kirkpatrick

1965

Journal

Falmyra Atoll, Line Islands

- Mar. 16 We banded Sooty Terns in the large nesting colony that is located on the runway.  
(cont.)  
Mar. 17 We again banded Sooty Terns after dark.  
Mar. 18 We banded and bled Red-footed Boobys around the edges of islands on the east side of the atoll.  
Mar. 19 We returned to the Hitehiti and headed for Honolulu.



SPECIES ACCOUNT

R.D. Kirkpatrick

1964

Anous stolidus

Sand Island, Johnston Atoll, Pacific

Oct.

2 P.M. Seven young Brown

22

Noddys (Common Noddy Terns) were caught by hand and banded on the east side of the island.

Nov.

11

The last young was weighed and measured. All the others in the development study have flown or disappeared.

11 P.M. An adult with a broken wing was bled. 5 cc. of blood was obtained.

Dec.

20

A.M. An adult that had broken a wing by hitting a guywire was found. We unsuccessfully tried to take its blood.



R.D. Kirkpatrick

1964

Arenaria interpres

Sand Island, Johnston Atoll, Pacific

Oct.

3:30 PM

Two adults were

19

caught in the mist net set up  
in the Coast Guard Station lawn  
near the tennis courts. They  
were banded and orange vinyl  
plastic was attached to their legs,  
then they were released.



R.D. Kirkpatrick

1964

Asio flammeus

Sand Island, Johnston Atoll, Pacific

Nov.

8:30 A.M. Dennis Stadel and I

24

observed an adult Short-eared Owl leave a Wedge-tailed Shearwater Burrow and fly east. The burrow was just south of the road that transverses the Mus grid. The bird circled around and probably did not leave the island. No attempt was made to collect it.

Dec.

10

9 A.M. Phil Lehner and I observed an

adult flush from the ground 10 feet from us and fly toward Johnston Island. Frigatebirds harassed it as it flew past the islet. It had flushed from the ground surface in the Lepturus west of the road which goes to the old pier.

P.M. We constructed a perch and placed it in the Lepturus south of the Mus grid. Four owl pellets were picked up near where the owl had flushed.



R.D. Kirkpatrick

1965

Canis familiaris

Fakaofu, Tokelau Islands

Feb.

27

Our native guides inform me that many dogs are kept in the village to kill rats and as pets. Some are sometimes taken to other islands of the atoll to kill rats. Dogs are not eaten by the villagers and ~~do~~ do not bite the children.

Nukunono Atoll, Tokelau Islands

Feb.

28

No dogs are on this atoll. According to the resident American nun, an Alsatian dog was brought to the atoll within the past 10 years. She wished to be rid of the animal so the natives ate it.

Atafu Atoll, Tokelau Islands

Mar.

3

One dog is kept on the atoll at the village. According to the natives, the village children tease it and have made it ill-natured. They claim that they do not eat dogs.



R.D. Kirkpatrick

1965

Diomedea nigripes

Pacific Ocean south of Oahu

Jan

25

Two, and later 3, Black-footed Albatrosses began following the ship just after we cleared Pearl Harbor. They flew just ~~about~~ above the water surface and were not observed to feed or set down even though they followed the ship until sundown.



R.D. Kirkpatrick

1964

Erolia acuminata

Sand Island, Johnston Atoll, Pacific

Oct.

6:30 PM

An adult Sharp-tailed

19

Sandpiper was observed near several Ruddy Turnstones and Golden Plovers. It was collected with a shotgun since the identification was not certain. It was weighed, measured and frozen. Ectoparasites were collected.

Prior to being shot, it walked around and flew up to 15 feet high without vocalizing. The buffy neck and upper breast were very apparent in the living bird. It could be approached to within 20 feet.



R.D. Kirkpatrick

1965

Felis domestica

Pacific

Feb.

Howland, Baker, Hull and Enderbury all had feral cats until they were killed off by Project personnel.

A Hull specimen skull was collected as RDK #556.

Enderbury may still have a few cats on it since 2 bird carcasses appeared to have been fed on by a cat.

Tokalan Islands

Feb.

26

Thompson observed one cat on an island across the lagoon from the village on Fakaofo Atoll.

Feb.

27

Our native guides on Fakaofo say that there are many cats in the village and on other islands of the atoll. They are kept to kill rats and as pets. They are not eaten and are fed fish.

Nukunono Atoll, Tokalan Islands

Feb.

28

Cats were observed in the village and 2 cats were seen on an uninhabited island 8 miles from the village.



R.D. Kirkpatrick

1965

Felis domestica

Atafu Atoll, Tokelau Islands

Mar. Many cats are present on the atoll.  
3 The natives keep the cats as pets and to eat rats. They do not eat the cats.

Jarvis Island, Line Islands

Mar. 211 cats were killed by ATF trip  
7 personnel during their stay here March 14-19, 1964. Many more were seen but not killed. The killed cats were in poor physical shape.

On the present trip, 12 cats were killed, included at least 2 kittens and 2 lactating females. All of the cats killed were in excellent physical condition.

At least 2 cats are known to still be on the island since they were seen but not killed.



R.D. Kirkpatrick

1964

Fregata minor

Sand Island Johnston Atoll, Pacific

Oct

19

6 P.M. An immature, unbanded Great Frigatebird was being kept on a small islet where a WWII bunker is located because its right wing was damaged when it flew into a guywire of the highest Loran tower. When we approached it to force feed it fish, it took off. After flying poorly for about 40 feet, it started flying well and soon was lost among the hundreds of others of the same species that were circling around.

Nov.

28

SA Terry Dutcliffe and some other Coast Guardsmen ~~to~~, including enlisted men from the USS Black Hawk, fired many rounds from small arms on the island.

Nov.

29

Chief Riggins and I examined 8 birds (including band #'s 737-44543, 737-44241, 737-44542) dead from being shot, probably with a .22 caliber weapon.

Dec.

2

P.M. The nesting or breeding colony was deserted and the 5 nests (3 with eggs) were apparently abandoned since the eggs were rolled away from the nests.



R.D. Kirkpatrick

1964

Fregata minor

Sand Island, Johnston Atoll, Pacific

Dec. PM. A dead immature female was  
3 found under the tower guywire  
where it had killed itself.

Dec. AM. A female was incubating a  
19 single egg on a nest on the south  
side of Sand Island. The egg was  
not there on Dec. 17.

Dec. 6:30 PM. Two adult females were  
21 observed flying close together <sup>100 feet</sup> over  
the island (along with many  
other frigates). One was harassing  
the other by flying at it and pecking  
it. The harassed bird made a  
visible effort and regurgitated  
a 4" long food item. A third  
frigate (sex not noted) caught  
and swallowed the food item  
before it had fallen 4 feet.  
All 3 birds flew on, then, dis-  
regarding each other.



R.D. Kirkpatrick

1965

Fregata minor

Enderbury Island, Phoenix Islands, Pacific

Feb.

14

A large colony of nesting Great Frigatebirds were banded and nylon wing streamers were attached.

Part of the colony had been disturbed on Feb. 12 when that part was censused. Today that area of the colony had very jumpy birds that flushed wild. Birds in the undisturbed part of the colony were easier to catch.

A blue streamer was placed on the right wing and a white one on the left. Each streamer was  $\frac{1}{2}$ " X 14". They were long enough but should have been  $\frac{3}{4}$ " to 1" wide. The blue color did not show up well to the unaided eye when the bird was flying more than 75 feet away. The white was quite obvious, however.



R.D. Kirkpatrick

1964

Heteroscelus incanum

Sand Island, Johnston Atoll, Pacific

Dec

2 P.M. An unbanded adult was  
2. observed near the water's edge  
near the east end of the causeway.

Dec

4 11:15 A.M. Two unbanded adult  
Wandering Tattlers were observed along  
the south side of the causeway - one  
at the east end and one mid-way out.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Oct. 11 PM I baited and set the 25  
19 traps on the grid.

Six mice were seen and at least 3 mice were in traps by the time I finished setting all the traps.

Oct. 8:30 A.M. Had 17 mice, including  
20 an unmarked one, in traps.

10 A.M. Used 23 traps to expand grid to 70' X 30'. Trap #'s 26 through 48 were set at 10' intervals whereas traps 1-25 were left in their old positions with 5' intervals.

↑  
N

35	36	37	38	39	40	41	42		
34	33	32	25	24	23	22	21	44	43
			16	17	18	19	20		
29	30	31	15	14	13	12	11	45	46
			6	7	8	9	10		
28	27	26	5	4	3	2	1	48	47

The grid now includes 2,100 sq. ft of area.

3:30 P.M. 21 dropping boards were cut from cardboard and



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Oct.

20

placed in two lines through the most heavily vegetated part of the island (at east end of causeway) to see if the mice will use them.

4 P.M. A sick mouse was tagged (but not given a collection number) and frozen. It may have been dying from Warfarin. No ectoparasites were noted.

Oct.

21

1 P.M. The dropping boards were examined. They were wet and soggy since it was raining. One mouse scat was on each of two boards. Either rain had washed away the other scats or mice did not use the boards.

31 mice were found in the 48 traps on the grid. 9 of them had not been trapped before. 8 of the 9 were toe-clipped. The ninth was not since it seemed weak and chilled - it was released.

Oct.

22

27 mice were in the 48 grid traps. 7 of them had not been trapped



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Oct. before.

22 (cont.) An adult ♂ #4 was caught in trap 49 which was set on the causeway. I made it into skin and skull RDK # 388. The eyeballs were saved in 10% formalin. It was not particularly fat.

10 P.M. ♀ #234 was found dead in trap 48 while the traps were being set.

Oct. 23 I caught RDK # 389 in trap 49 on the causeway.

Oct. 24 RDK #s 390 and 391 were caught in trap 49 on the causeway.

Four ½-gallon milk cartons (with the top cut off) had been put out west of the grid on 10-23-64. Two of them had Mus feces in them today.

Oct. 26 I caught RDK # 392 ♂ in trap 49 on the causeway.

Oct. 27 A total of 10 ½-gallon milk cartons are out. The mice seem to defecate in them only very sporadically.



R.D. Kirkpatrick

1964

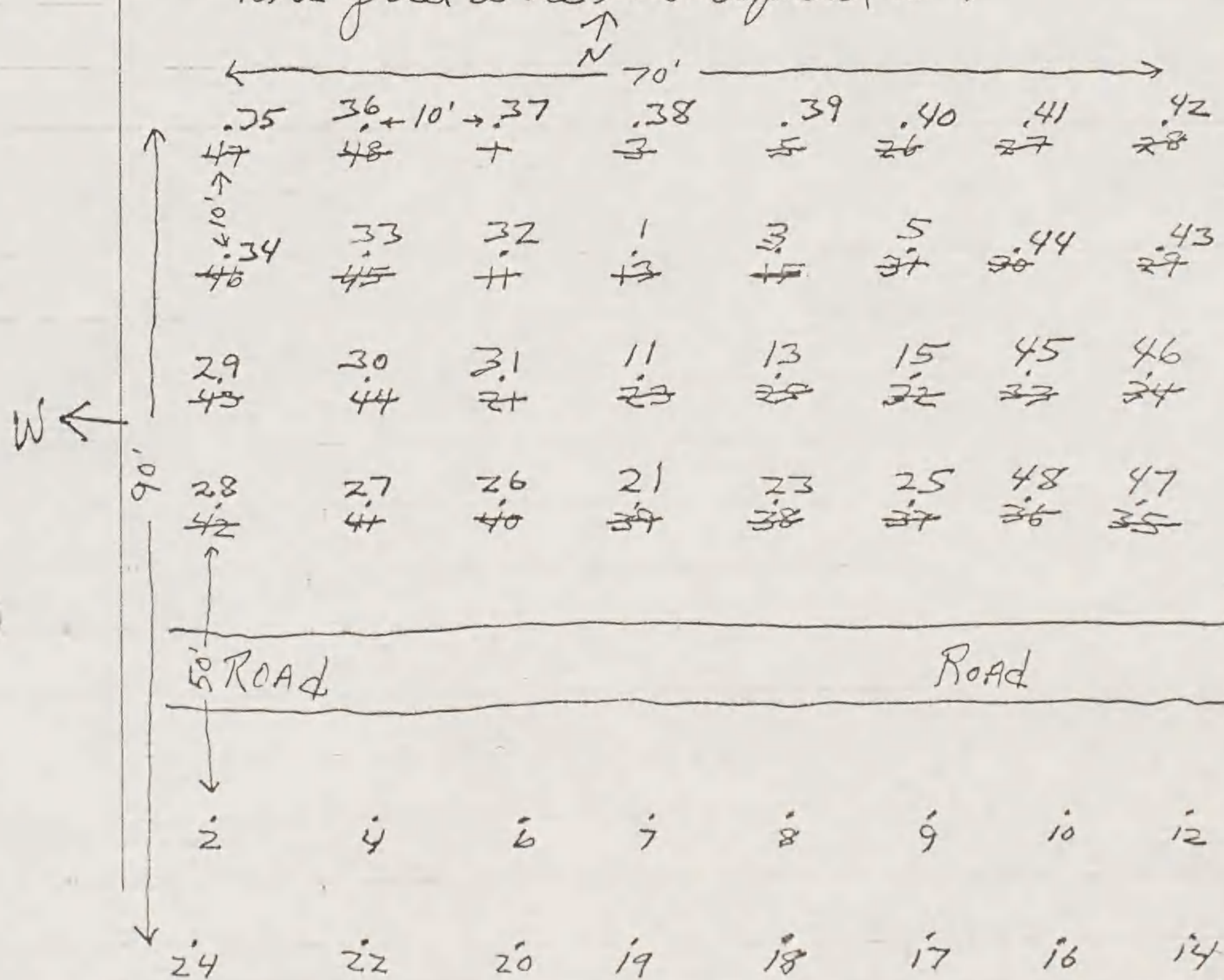
Mus musculus

Sand Island, Johnston Atoll, Pacific Ocean

Oct. 27 A total of 29 mice (including 3 new ones) were trapped on the grid.

(cont.) RDK #2 393♀ and 394♂ were made into study skins. They had been caught at midnight by hand on the central part of the island. ♀ #393 had had at least one litter but was not lactating now. She had 10 mammae (6 in the pectoral region and 4 in the inguinal region).

Oct. 31 A total of 36 mice (including 2 unmarked ones) were trapped on the grid. The grid was modified to:





R.D. Kirkpatrick

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Mus musculus

Sand Island, Johnston Atoll, Pacific Ocean

Nov.

1 A.M. A total of 35 mice (including 10 unmarked ones) were trapped on the new grid. Two of the unmarked ones were destroyed because they were overheated in the traps and it was felt that they would not survive. One of the 2 was made into skin and skull RDK # 396.

9:30 to 10 P.M. The 48 grid traps were set.

Nov.

2 8:30 to 9 A.M. A total of 36 mice (including seven unmarked ones) were found in the grid traps.

These Mice will not use dropping boards or open  $\frac{1}{2}$ -gallon milk cartons to defecate on or in. The only use made of them was incidental or accidental.

The mice do use Wedge tail Shearwater burrows for cover as well as vegetation and debris on the ground since they are commonly observed, day as well as night, running into and out of the burrows constructed by birds.

Nov.

3 8 to 8:30 A.M. A total of 37 mice (including 7 unmarked ones) were found on the grid.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov. 9 A.M. 38 mice (including 5  
4 unmarked ones) were caught on the  
grid.

Nov. 8 A.M. 40 mice (including 4 unmarked  
5 ones) were caught on the grid.

11 P.M. It was noted that mouse  
eyes reflect the light of a flash-  
light (which is characteristic of  
nocturnal animals).

Nov. 8:30 A.M. 29 mice (including 3  
6 unmarked ones) were caught on the grid.

Nov. The traps were not set last night.  
7 7:30 A.M. I set all the grid traps but  
did not bait them.

9:30 A.M. No Mus were in the traps.

11:30 A.M. " " " " " "

1:30 P.M. " " " " " "

3:30 P.M. " " " " " "

5:30 P.M. One Mus (marked) was in the traps.

7:30 P.M. 15 Mus (including 2 unmarked  
ones) were in the traps.

Nov. 3:30 A.M. 33 Mus (including 5  
8 unmarked ones) were in the unbaited  
traps.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov.

7:30 A.M. 16 Mus (all marked) were

8 in the unbaited grid traps.

(cont.)

9:30 A.M. One marked Mus was caught.

11:30 A.M. No Mus were trapped.

1:30 P.M. One marked Mus was caught.

3:30 P.M. One Mus (#30187) was

caught in trap #39.

5:30 P.M. One Mus (#38177) was caught in trap #18.

7:30 P.M. Eleven Mus (including 3 unmarked ones) were caught. It rained very hard just as we finished and #424, which had been caught in trap #22, was released at the signal tower building in the center of the island.

9:30 P.M. Thirteen Mus (all marked) were caught.

11:30 P.M. Eleven marked Mus were caught.

Nov.

1:30 A.M. Eight Mus (7 of them marked)

9 were caught in the unbaited grid traps.

3:30 A.M. Five Mus (4 of them marked)

were caught in the traps.

5:30 A.M. Two marked Mus were caught.

7:30 A.M. One " " was " .

9:30 A.M. No Mus were caught.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov.  
9  
(cont.)

11:30 A.M. No Mus were caught.

12 Noon. A rain squall occurred.

1:30 P.M. No Mus were caught.

3:30 P.M. " " " "

5:30 P.M. " " " "

7:30 P.M. Five Mus (including 2 unmarked ones) were caught.

9:30 P.M. Four Mus (including 1 unmarked one) were caught in the unbaited traps.

11:30 P.M. Six Mus (including 2 unmarked ones) were caught.

All the traps were cleaned, adjusted and baited with dry rolled oats.

Nov.

10 9:30 A.M. 38 Mus (including 7 unmarked ones) were caught.

10 A.M. All the traps were rebaited.

11:30 A.M. Two marked Mus were in the traps.

1:30 P.M. " " " " " "

3:30 P.M. Four Mus (including one unmarked one) were in the baited traps.

5:30 P.M. Nine Mus (including 4 unmarked ones) were in the traps.

7:30 P.M. 22 Mus (including 7 unmarked ones) were in the traps.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov. 9:30 P.M. 40 Mus (including 5  
10 unmarked ones) were caught.  
(cont.) 11:30 P.M. 33 Mus (including 8  
unmarked ones) were caught.

Nov. 1:30 A.M. 30 Mus (including 7  
11 unmarked ones) were caught.

3:30 A.M. 24 Mus (including 5  
unmarked ones) were caught.

5:30 A.M. 28 Mus (including 4  
unmarked ones) were caught.

7:30 A.M. 8 marked Mus were caught.  
The traps were closed.

11:00 P.M. The traps were baited and  
set.

Nov. 7:30 A.M. 42 Mus (including 4 unmarked  
12 ones) were caught in the 48 grid traps.

Nov. 8 A.M. 38 Mus (including 3 unmarked  
13 ones) were caught in the 48 grid traps.

Nov. 10 P.M. The grid traps were set.  
14.

Nov. 9:30 A.M. 40 Mus (including 3 un-  
15. marked ones) were trapped.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov.

5:30 P.M. 27 traps were set in

a line SE of the tall tower.

(cont.)

10 P.M. The grid traps were set.

23 of the 27 other traps had mice in them. I took them to the barracks

Nov.

8 A.M. ~~47~~ 47 Mus (30 of them unmarked)

16

were caught on the grid. The remaining 4 traps set SW of the tall tower had mice in them.

We weighed, measured, autopsied, and processed 21 mice. Two additional mice were found to be toe-clipped - they were returned to the grid and released. They were #s 486 and 469.

9:30 P.M. The grid traps were set and 23 other live traps were set in a line running NE from the tall signal tower.

Nov.

8 A.M. 41 Mus were in the grid traps.

17

All were already marked.

8:30 A.M. 19 Mus were in the 23 traps

set NE of the tower.

21 Mus were autopsied and processed.

Mus # 253 and 202 were caught in the 2nd string of traps. They were released on the grid.

10 A.M. Grid traps were set plus 27 others south of tower.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov. 18 8 AM. A total of 40 Mus (including 1 unmarked one) was caught on the grid.

Ten Mus were caught in the line of baited live traps running south from the Signal Tower.

Midnight. The grid traps were set.

P.M. The 10 Mus were autopsied and processed (molt, measurements, etc.).

Nov. 19 7:30 A.M. A total of 42 Mus (including 1 unmarked one) was caught on the grid.

10 P.M. The grid traps were set.

Nov. 20 8:15 A.M. A total of 42 Mus (including 1 unmarked one) was caught on the grid.

11 P.M. The grid traps were set.

Nov. 21 10 A.M. A total of 39 marked Mus were caught in the grid traps.

Nov. 23 P.M. The grid was altered to include 72 traps set at a 20' X 20' spacing (except along the road that transverse the grid).

7 P.M. The grid traps were baited with rolled oats and set.



R.D. Kirkpatrick

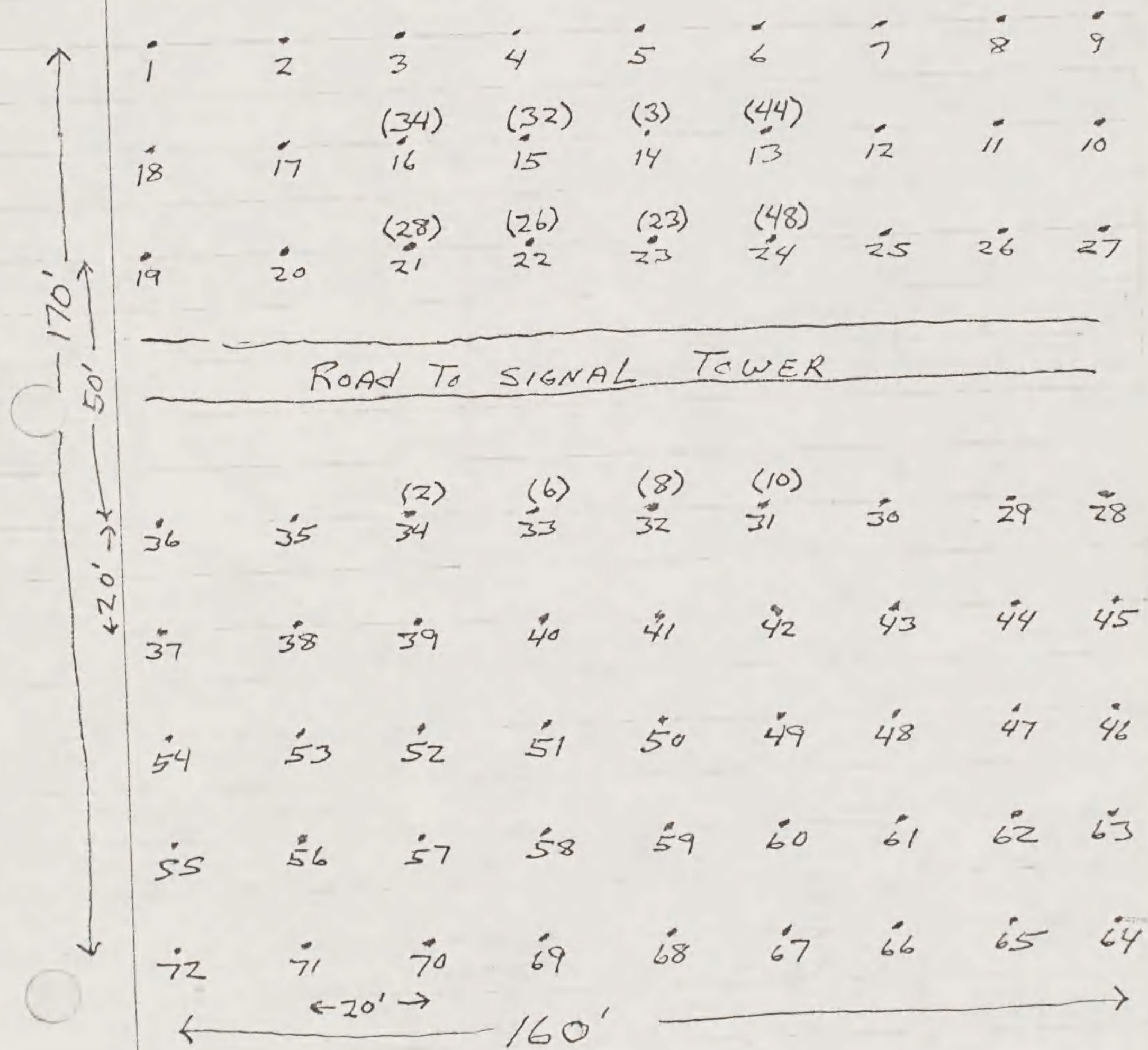
1964

Mus. musculus

Sand Island, Johnston Atoll, Pacific

Nov.

The grid was altered to the following arrangement. The numbers in ( ) show (cont.) trap numbers in the grid which was set up on Oct. 31.



The traps and stakes at each station are numbered. The stakes are also painted red.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov.

8 AM. A total of 51 Mus (including 22 unmarked ones) were caught in the 72 baited grid traps.

Nov.

11:30 P.M. The grid traps were baited and set.

Nov.

9:30 AM. A total of 49 Mus (including 15 unmarked ones) were caught on the grid.  
10:30 P.M. The grid traps were set.

Nov.

8:15 AM. A total of 57 Mus (including 9 unmarked ones) were caught on the grid.  
10:00 P.M. The grid traps were set.

Nov.

8:30 A.M. A total of 64 Mus (including 9 unmarked ones) were caught on the grid.

Nov.

9 A.M. A total of 60 Mus (including 4 unmarked ones) were caught on the grid.  
11 P.M. The grid traps were set.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Nov.

9 A.M. A total of 57 Mus (including 5 unmarked ones) were in the grid traps.

30

♂ # 396 had eaten the skin and flesh from the head and shoulders of ♂ # 393 which was caught in the door of trap # 33. This is my first evidence of carnivorous behavior in these Mus.

10 P.M. The grid traps were set.

Dec.

8 A.M. A total of ~~55~~<sup>56</sup> Mus (including

12 unmarked ones) were in the grid traps.

10:30 P.M. The grid traps were set.

Dec.

8 A.M. A total of 58 Mus (including

27 unmarked ones) were in the 72 grid traps.

10:30 P.M. The grid traps were set.

Dec.

8 A.M. A total of 56 Mus (including

34 unmarked ones) were caught on the grid.

10 P.M. The grid traps were set.

Dec.

8:30 A.M. A total of 63 Mus (including

45 unmarked ones) were caught on the grid.

10:30 P.M. The grid traps were set.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific

Dec. 8:30 A.M. A total of 62 Mus (including 5 unmarked ones) were caught on the grid.  
Midnight. The grid traps were set.

Dec. 8:30 A.M. A total of 59 Mus (including 6 unmarked ones) were caught on the grid.  
10 P.M. The grid traps were set.

Dec. 9 A.M. A total of 55 Mus (including 7 unmarked ones) were caught on the grid.  
6 P.M. 25 traps were set ESE of the tower.

Dec. 9 A.M. 21 Mus (RDK 452 - RDK 472) were in the traps. We autopsied them.  
5:30 P.M. We set the 25 Mus traps east of the tower.  
Flat skins, skulls, eyeballs and stomachs were saved.

Dec. 9 A.M. 20 Mus (RDK 473 - RDK 492) were in the traps. We autopsied them.  
7:30 P.M. We set the 25 traps west of the N-S road in the Lepturus on the west edge of the old island.



R.D. Kirkpatrick

1964 Mus. musculus  
Sand Island, Johnston Atoll, Pacific

Dec. 10 9 AM. Six Mus were in the 25 traps. Five of them (RDK493-497) were autopsied. The sixth one was ♀ #479. She was released on the causeway east of the Signal Bldg.

Dec. 13 6 PM. 25 Mus traps were set SE of the signal tower.

Dec. 14 6 PM. We placed analine dyed bait (rolled oats) in the 4 Mus cages with the 20 mice we caught last night. The four dyes used were Methylene Blue, Basic Fuchsin, Fast Green FCF, and Gentian Violet. The mice began eating it.

Dec. 15 Noon. Some colored oats had been passed by the mice. Methylene Blue did not show up well. Basic Fuchsin (red) seemed to show up best.

Dec. 16 We released the remaining mice that had been fed dye.

Dec. 17 9:30 AM. 5 lines of traps (a total of 45 traps) were baited and set in the mouse grid.



R.D. Kirkpatrick

1964

Mus. musculus

Sand Island, Johnston Atoll, Pacific

Dec 17 11:30 AM. Two mice (including an unmarked one) were trapped on the grid.  
(cont.) 1:30 PM. ♀ #343 was dead in a trap, apparently from being overheated.

3:30 PM. One mouse was caught.

5:30 P.M. Two mice were caught.

7:30 P.M. 23 mice (including 2 unmarked ones) were caught in traps.

9:30 P.M. 25 mice (including 4 unmarked ones) were caught.

11:30 P.M. 16 mice (including 2 unmarked ones) were caught.

Dec 18 1:30 A.M. 23 mice (including 5 unmarked ones) were caught.

3:30 AM. 14 mice (including 3 unmarked ones) were caught.

5:30 AM. 22 mice (including 4 unmarked ones) were caught.

7:30 AM. 17 mice (including 4 unmarked ones) were caught.

9:30 AM. No mice were caught.

11:30 A.M. No mice were caught.

1:30 <sup>P.</sup> M. One <sup>unmarked</sup> mouse was caught.

3:30 P.M. No mice were caught.

5:30 P.M. One mouse was caught.

7:30 P.M. 14 mice (including one unmarked one) were caught. The traps were closed.



R.D. Kirkpatrick

1964

Mus musculus

Sand Island, Johnston Atoll, Pacific Ocean

Dec. P.M. Coast Guardsmen killed a green-  
18 footed mouse in the Loran Transmitter  
(cont.) Bldg. This mouse had been released  
on the grid on Dec. 16. It must have  
moved not less than 100 yards west  
along the causeway to the building.

Dec. The tide was very high, crossing  
22. the causeway and flooding part  
of the north and west parts of  
the grid. An unknown amount  
of mortality occurred. Station  
dogs killed at least 15 mice  
that were flooded out of their  
usual haunts. The water must  
have killed several.

Dec. 11:30 A.M. We set 5 lines of traps  
27 (45) for an activity study.

1:30 P.M. One marked mouse was  
caught.

3:30 P.M. No mice were in the traps.

5:30 P.M. One marked mouse was  
caught.

7:30 P.M. Ten mice (including an  
unmarked one) were caught.

9:30 P.M. 22 mice (including 3  
unmarked ones) were caught.



R.D. Kirkpatrick

1964 Mus musculus  
Sand Island, Johnston Atoll, Pacific

Dec. 27 11:30 P.M. 24 mice (including 5 unmarked ones) were caught.

(cont)  
Dec. 28 1:30 A.M. 14 mice (including 5 unmarked ones) were caught.

3:30 A.M. 12 mice (including an unmarked one) were caught.

5:30 A.M. 10 mice (including an unmarked one) were caught.

7:30 A.M. 2 marked mice were caught.

9:30 A.M. One marked mouse was caught.

11:30 A.M. No mice were caught.

1:30 P.M. No mice were caught.

3:30 P.M. No mice were caught.

5:30 P.M. One marked mouse was caught.

7:30 P.M. Three marked mice were caught.

1965 9:30 A.M. The 72 grid traps had 34 mice (including 3 unmarked ones) in them.

11:30 P.M. We set the grid traps.

Jan. 2 9:30 A.M. 29 mice (including one unmarked one) were in the grid traps.  
Midnight. We set the grid traps (which had been cleared in the P.M.).



R.D. Kirkpatrick

1965

Mus musculus

Sand Island, Johnston Atoll, Pacific

Jan. 3 9 A.M. We found 38 Mus (including 2 unmarked ones) in the grid traps.

10:30 P.M. We set the grid traps.

Jan. 4 10 A.M. We found 36 Mus (including one unmarked one) in the grid traps.

10 P.M. We set the grid traps.

Jan. 5 9 A.M. We found 41 Mus (including 4 unmarked ones) in the grid traps.

10 P.M. We set the grid traps.

Jan. 6 9:30 A.M. We found 39 Mus (including 8 unmarked ones) in the grid traps.

10 P.M. We set the Mus traps.

Jan. 7 9:30 A.M. We found 40 Mus (including no unmarked ones) in the grid traps.

Jan. 8 6:30 P.M. We set 25 Mus traps SE of the tower.

Jan. 9 10 A.M. 15 mice were in the 25 traps. #704 was caught also #325♂. We released the 2 marked mice on the grid. The 13 mice (RDK #504 thru RDK #516) were autopsied. Eyeballs, skulls,



R.D. Kirkpatrick

1965

Mus musculus

Sand Island, Johnston Atoll, Pacific

Jan some stomachs and some skins  
9 were saved.

(cont) 30 traps were set SE of the  
tower at 7 P.M.

Jan

10 17 mice were in the 30 traps. #716, #704♀,  
#741♀, #508♀ (2 and 3 hundred toes) were among the  
17 and were released on the grid.  
The other 13 Mus were autopsied  
(RDK #517 through RDK #529).

35 traps were baited and set  
east of the tower at 7 P.M.

#704♀ was caught today for the  
second straight day. Yesterday it  
was released on the grid. It had  
traveled from the grid back to the  
trap (homing evidence?).

Jan.

11 19 mice were in the traps. #402♂, #456♂,  
743♀, 453♂, 324♂ were among the 19.

We released the 5 marked ones on  
the grid and autopsied the rest.

25 traps were set NE of the  
tower at 7 P.M.

Jan

12 6 mice were in the traps. #253♀ was one  
of them, we released her in the grid.  
The other 5 (RDK 544 thru RDK 548)  
were autopsied.



R.D. Kirkpatrick

1965

Mus musculus

Howland Island, mid-Pacific

Feb.

1,2

Apparently no mammals are on this island. No mice were seen or found day or night and no sign was found.

Baker Island, mid-Pacific

Feb.

3,

4

Mice are abundant. They were seen darting from one cover to another both day and night.

I caught 2 ♂'s by hand under old boards on the 4th and made them into skins and skulls RDK 549 and 550.

♀ #551 was made into a skin and skull.

Hackman and I caught and examined but did not collect:

♀ 131-67-17-12 = 7.4 gm. not pg.

♀ 140-69-17-12 = 9.1 gm. not pg.

♂ 145-74-18-13; testes (scrotal) 7 mm - skull RDK #552

♂ 150-75-17-12; " " 9 mm - " " " 553

♀ 127-66-17-12; ovary minute; not pg.; " " " 554

McKean Island, Phoenix Islands, mid-Pacific

Feb.

6

No Mus or other mammals on this island. Major past human activity here was 19th century guano mining. No WWII airfield or other activity, apparently.



R.D. Kirkpatrick

1965

Mus musculus

Jarvis Island, Line Islands, Pacific

Mar.

7

After dark our party saw several mice, many of them in Sesuvium.

Mar.

8

An adult ♀ was killed near camp. She was not pg. nor lactating but had had a litter in the past. She was in good physical condition.



R.D. Kirkpatrick

1965

Phaethon lepturus

Pacific Ocean south of Oahu

Jan

25

PM Six hours out of Pearl Harbor, one adult flew up from the rear of the ship, circled the ship then flew north. It was squaking as it passed over the ship.



R.D. Kirkpatrick

1964

Phaethon rubricauda

Sand Island, Johnston Atoll, Pacific

Oct. 6 PM We fed the three young  
19 Red-tailed Tropicbirds that are  
being kept on the small islet  
where the WWII bunker is  
located. They were placed  
there from Johnston Island  
where their nests were bull-  
dozed away last week.

Each of the three ate 6 to 8  
5 inches-long fish

Oct. The 2 smaller yg. birds were dead.

23 The larger of the 2 was collected and  
frozen.

Oct. The remaining yg. bird apparently  
26 flew away since it could not be located.

Nov. Band # 615-01686 was placed on  
3 an adult.

Nov. 1:30 P.M. One bird was observed flying  
9 over the island.

Nov. The young bird on Johnston Island is  
21 gone, presumably having flown away.

Nov. 11 A.M. A single adult circled over the island  
27 then lit. We picked it up and put on it  
band # 615-01822.



R.D. Kirkpatrick

1964

Phaethon rubricauda

Sand Island, Johnston Atoll, Pacific

Dec 1 10:40 A.M. Two adults were observed sitting a foot apart under a 4-foot high bush (ironweed?) at the west end of the causeway just east of the barracks. They were both squawking loudly.

Dec 4 10 A.M. Six adults circled over the island.

P.M. A dead, unbanded adult was found where it had fallen after hitting a guy wire.

Johnston Island

Dec 5 Noon. Three adults were observed flying and calling over the island.

Sand Island, Johnston Atoll

Dec 22 P.M. I caught an adult on a nest containing a single egg under a bush at the west end of the causeway. We banded the bird. The egg had not been there more than 3 days.

1965

Jan 6 10:30 A.M. Two adults were at the nest under the Scaevola bush (see Dec. 22). We caught one and painted a green X on its breast and put green on its head. It carried band #565-12069. The other bird is also banded.



R.D. Kirkpatrick

1965

Phaethon rubricauda

Johnston Island, Johnston Atoll, Pacific

Jan

Noon. Eight adults were

57 observed flying around in a group over the island.



R.D. Kirkpatrick

1964

Pluvialis dominica

Sand Island, Johnston Atoll, Pacific

Oct.

22

4:30 P.M. Three non-breeding, adult Golden Plovers were caught in the mist net set up on the lawn by the tennis court. They were banded and orange streamers were attached to their legs.

10 P.M. An adult was caught in the second mist net, banded, and released.

North Island, Johnston Atoll, Pacific

Dec

1

11 A.M. to 2:30 P.M. Five birds were observed on this island. No other species were seen.

Sand Island, Johnston Atoll, Pacific

Dec.

10

P.M. An adult with a broken wing (guywire casualty) was collected. It was measured and frozen (USNM Field # 25250).

11 P.M. Another adult guywire casualty was collected and frozen (USNM Field # 25251).

Dec.

13

P.M. An adult guywire casualty was collected and frozen (USNM Field # 25252).



R. D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Oct. 8:45 P.M. to 10:15 P.M. Stadeland  
20 I banded and placed orange streamers  
on 56 Wedge-tailed Shearwaters.  
It was difficult since the moon  
was bright and the birds flushed  
wild.

Oct. The numbers of these birds using the  
26 island seems to be declining either  
because of the continued disturbance  
when we band them or because they  
are leaving now that breeding is  
over and the young are leaving the  
nest.

Nov. 10 A.M. Air and burrow temperatures  
2 were taken at ten active (where a chick  
was present) burrows and at ten  
inactive (empty) burrows.

The chicks apparently will not  
remain much longer since most of  
the remaining ones have lost all  
or most of their down.

Nov. Bird with band # 615-00654 had a #7  
11 orange vinyl streamer attached to its  
right wing. It streamed back about



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific Ocean

Nov. eight inches. It was quite visible but  
11 interfered somewhat with the bird's  
(cont) flight, at least initially after release.  
The streamer was attached on the upper  
wing against the bird's body.

Bird bearing band #565-12759 had  
a #7 vinyl streamer attached just as the  
preceding bird had but it only streamed  
about 3 inches. This made it visible  
longer or further away than the new  
leg streamer that had been attached  
but not as far as the 1st bird's streamer.

Bird with band #565-12169 had a  
6 inch long #7 streamer attached to its  
right wing near the body. This seems to  
be the right length for good visibility.  
The streamer was still visible even after  
the bird was too far away for positive  
identification.

Bird with band #615-00394 had a #7  
streamer attached to the right wing out  
just before the start of the primaries.  
This did not seem to interfere with the  
bird's flight and made the 6 inch long  
streamer visible for a maximum  
distance.



RD Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov

10 P.M.

I counted 179 birds including young. The four wing banded birds were not seen.

15

Nov.

9 A.M.

The Coast Guard station dog killed 5 young Wedge Tails. We processed and froze 4 of them.

16

Nov.

10 P.M.

Four adults were caught and put in cages for wing-tagging study.

17

Nov.

9 A.M.

A banded adult had a 3" square of orange nylon with the #1 on it affixed to its right wing with a metal band. The tag did not hinder the bird's flight and also did not show up on the flying bird.

18

An adult (band # 535-13648) had a streamer  $\frac{1}{2}$ " wide by 8" long with #2 painted on it affixed to the right wing by a metal band. A blood vessel was hit when the hole was made for the band and the bird bled profusely. The streamer seemed to be wider than necessary and flapped overmuchly. The bird lit on the water after flying 100 yards.



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov. An adult (band #615-01395) had a  
13 1" X 8" streamer attached to its right wing  
(cont.) with a metal band. "3" was painted on  
the orange nylon streamer. It showed  
up very well as long as the bird was  
in sight and didn't seem to interfere  
with its flight.

An adult (band #535-13632) had  
a 2" diameter circle of orange nylon  
with a "4" painted on it, affixed to  
its right wing with a metal band.  
As the bird flew, the nylon rolled up  
and was not nearly as visible as a  
streamer would have been.

Nov. An adult (band #565-12317) had a  
19 1" X 12" orange streamer with a "5" painted  
on it placed around its right wing with-  
out a metal band. It flew well and  
the streamer was very visible although  
it was somewhat longer than necessary.

An adult (band #565-12383) had  
a 1" X 10" orange streamer with a "6" painted  
on it placed around its right wing with-  
out a metal band. This seems to be an  
ideal sized streamer.



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov.

19 An adult (band # 565-12399) had a 6" X 1" orange streamer with "7" painted on it attached to its right wing with a metal band. A blood vessel was hit when the slit was made for the band but it did not bleed too freely. An adult (band # 565-12174) had the same size streamer (with an "8" on it) attached in the same manner. The streamers were quite visible, but both of them went forward and hung beneath the wing.

10 P.M. Four adults were caught and placed in a cage for wing-tagging.

Two dead young were found at the mouth of their burrows where the C. G. dog had killed them. One was unbanded, the other bore band # 535-13957.

Nov.

20 9:15 A.M. Adult with band # 565-12107 and an unbanded adult each had a plain orange nylon streamer 1" X 10" put on its right wing. After passing around the wing, the streamer extended about 7" back.

Two adults (bands 615-00371 and 565-12176) had plain orange streamers 1" X 6" affixed to their right wings by metal bands. The last one bled freely.



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov.

19 An adult (band # 565-12399) had a  
(cont) 6" X 1" orange streamer with "7" painted on  
it attached to its right wing with a  
metal band. A blood vessel was hit  
when the slit was made for the band  
but it did not bleed too freely. An  
adult (band # 565-12174) had the same  
size streamer (with an "8" on it)  
attached in the same manner. The  
streamers were quite visible, but  
both of them went forward and hung  
beneath the wing.

10 P.M. Four adults were caught and  
placed in a cage for wing-tagging.

Two dead young were found at the  
mouth of their burrows where the C. L.  
dog had killed them. One was unbanded,  
the other bore band # 535-13957.

Nov.

20 9:15 A.M. Adult with band # 565-12107  
and an unbanded adult each had a  
plain orange nylon streamer 1" X 10" put on  
its right wing. After passing around the  
wing, the streamer extended about 7" back.

Two adults (bands 615-00371 and 565-12176)  
had plain orange streamers 1" X 6" affixed to  
their right wings by metal bands.  
The last one bled freely.



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov.

21 10:30 A.M. Two adults (bands 615-00318 and 615-01687) had 1"X10" orange streamers (jes) (#'s 9 and 10, respectively) affixed to their right wings. They flew well and the jes' were quite visible.

An unbanded adult and adult band #535-13790 had 6"X1" orange streamers (#'s 11 and 12 respectively) affixed to their right wings with "Zip" Wing Bands #895, Size 3 (National Band and Tag Co.) in the manner described by Hester (Bird-Banding, 1963). No. 11 bled some and No. 12 bled freely. The tags were quite visible.

Nov.

22 11 A.M. Adult (band #615-00264) had a 10"X1" jes (#16) attached to its right wing. Adults (band #'s 565-21779, 615-01685, 615-00314) had 9"X1" jes' (#'s 15, 14, 13 respectively) attached to their wings. The 9" long jes' seen long enough.

70 P.M. Unsuccessfully looked for wing-tagged birds.



R.D. Kirkpatrick

1964

Puffinus pacificus

Sand Island, Johnston Atoll, Pacific

Nov.

24

11 P.M. No wing-tagged birds were found. We banded 28 young that were at the mouth of their burrows. A total of 30 adults were counted.

Nov.

26

11 P.M. Adult with wing tag #8 was observed. The metal wing tag did not bother the bird.

Nov.

30

8:30 A.M. A young, unharmed bird was found at the front entrance of the barracks. It was banded with #615-01831 and released in a burrow near the Mus grid.

Dec.

1

8:30 A.M. Young bird, band #535-13954, was killed by the station dog.

Dec.

3

10:15 P.M. Adult, band #565-12174, which had a wing tag and streamer attached on Nov. 19, 1964, was caught and examined. The streamer was lost but the metal wing-tag was intact. The wound was healed.

Dec.

10

11 P.M. Only 3 birds (1 ad, 2 yg.) were found on the island.



R.D. Kirkpatrick

1965

Puffinus nativitatus

Sand Island, Johnston Atoll, Pacific

Jan  
10

7 P.M. Phil Lehner and I observed  
a banded adult Christmas Island  
Shearwater circling low over the  
east end of the island near the  
area where this species nested  
in 1964.

The bird was uniformly dark  
and was somewhat smaller than a  
Wedge-tail Shearwater. Its  
shape in flight was reminiscent  
of a Chimney Swift.

It flew within 12 feet of us.

~~Jan~~

Jan  
13

Binion Amerson found 2 banded  
adults in a nest cavity under a  
concrete slab on the east beach.  
No eggs are present.



R.D. Kirkpatrick

1964

Rattus <sup>rattus</sup> ~~exulans~~

Johnston Island, Johnston Atoll, Pacific

Oct.

28

A male rat was caught in a live-trap baited with rolled oats and set on a pier Navy Pier under packing crates. This is the same area where Lt. (j.g.) Richard Fleming, U.S.N.R., collected a rat on 3 September 1964. The Sept. rat was a ♀, T.L. 231 mm, T 131 mm, Ear 16 mm.

Today's rat was made into skin and skull RDK# 395♂. Ectoparasites were collected

Nov.

5

John Makilan, a Hawaiian who is working for Holmes and Narver, Inc. as an exterminator, gave me two rats which he had caught in snap traps. I made them into RDK# 397 and 398. #398 was apparently partly rotting since the skin tore and was very difficult to make up. The skull of the latter specimen was not saved since it was very badly crushed by the trap. No external parasites were found on either skin.

Dec.

24

John Makilan gave me two rats he had caught in snap traps. One was melanistic (RDK# 502).



R.D. Kirkpatrick

1965

Rattus exulans

Birnie Island, Phoenix Islands, Pacific

Feb.

10

Polynesian rats were very abundant here in Oct, 1964, according to Doug Hackman.

Now they are somewhat reduced in numbers but are still often seen especially at night. They stay in shallow burrows that they dig under rocks and under the bushy Portulaca plants.

Two adult males, RDK #557 and 558 were made into study skins.

Feb.

11

4 A.M. Seventeen rats were collected by catching them by hand. They were found to be as follows:

(1) ♀ 287-146-28-18 = 73.6 gm not pg.

(2) ♂ 269-136-28-17 = 75.1 gm

(3) ♀ 294-142-28-18 = 76.2 gm. not pg.

(4) ♂ 284-146-28-18 = 74.1 gm not pg.

(5) ♀ 271-135-27-17 = 70.4 gm. not pg.

(6) ♀ 287-143-28-19 = 75.2 gm

(7) ♂ 275-142-28-18 = 72.5 gm

(8) ♂ 270-127-28-17 = 70.8 gm.

(9) ♀ 276-140-28-17 = 71.4 gm. not pg.

(10) ♀ 255-125-27-17 = 60.7 gm not pg.

(11) ♀ 264-136-28-17 = 74.8 gm not pg.

(12) ♀ 276-146-29-17 = 69 gm not pg.



R.D. Kirkpatrick

1965

Rattus exulans

Burnie Island, Phoenix Islands, Pacific

Feb. (13) ♂ 283-148-28-18 = 79.8 gm.

11 (14) ♀ 276-140-30-18 = 73.4 gm not pg.

(cont) (15) ♀ 271-140-28-18 = 68.9 gm not pg.

(16) ♀ 261-138-28-18 = 63.3 gm. not pg.

(17) ♀ 265-134-28-17 = 68.5 gm. not pg.

A.M. A hermit crab crawled in the tent and ate the head off skin RDK#558.

Fakaofa Atoll, Tokelau Islands

Feb. The natives use cats and dogs to  
27 kill rats in their village and cocon-  
plantations since these rats eat many  
of the coconuts.

9 P.M. No rats had been caught although 25 Museum Specials had been set out during the night of Feb. 26th and during the day of the 27th. A disturbance was heard under the debris beneath several coconut trees. Two rats were observed fighting at a shallow hole in the ground. Our movement frightened them but our light did not. We set 2 traps baited with coconut meat near the hole. We stood still but left our light on. Three rats came to the hole. One of them went into



R.D. Kirkpatrick

1965

Rattus exulans

Fakaofu Atoll, Tokelau Islands

Feb. 27 the hole and appeared to gnaw on a live root. It smelled the trap bait, apparently, and was caught in a trap (it is now RDK # 561♂). Within 5 minutes RDK # 562♀ was also caught. A 3rd rat was caught in both traps but escaped. The Museum Specials are too small to catch and hold Polynesian rats. The 2 collected had their skulls crushed because the traps were too small (i.e. short).

Feb. 28 No additional rats were found in the traps and only 13 of the 25 traps were found. They had not been tied down and the rats and coconut crabs apparently carried them off. This atoll seems to have a fairly high rat population. Our native guides reported that they had not seen them swimming from island to island (often less than 30 yds) but they have noted that the population fluctuates from island to island and from time to time on the same island.



R.D. Kirkpatrick

1/65

Rattus exulans

Nakunono Atoll, Tokalan Islands

Feb.

28

This rat is present on this atoll according to the missionaries and natives. Natives have observed numbers of rats swimming from one island to another at certain times, according to the missionaries. They also report that the numbers of rats on any given island will fluctuate greatly from one time to another.

After dark I unsuccessfully hunted rats with a pistol. None were seen or heard. 5 snaptraps, baited with coconut meat, were set.

Mar.

1

No rats were in the traps.

A high percentage of the coconut trees have been protected from the rats by affixing a 1' wide strip of aluminum about 5' or 6' from the ground.

Traps were baited with burnt coconut meat and were set beside 3' deep piles of coconut husks. No rats were trapped.

RDK #563 and #564 were shot as they moved over a pile of coconut husks. They were apparently attracted by Apollo and I sitting by the husks talking. He says that they often come to groups of natives,



R.D. Kirkpatrick

1965

Rattus exulans

Mar Nukunono Atoll, Tokelau Islands

1 probably to forage for the food items  
(~~not~~ discarded by the natives.

The Polynesian rat population appears to be greater on this atoll (at least on the islands inspected) than it is on Fakasofu.

RDK #563 was a male and appeared to be very old. Its pelage was in poor condition and very little body fat was present.

RDK #564 was a lactating female. Only two inguinal mammae were well developed.

We (the native and I) inspected several Pandanus stumps and stumps. No fresh rat nests were found although old sign was seen. The native reported that he sometimes found rat nests in these locations.

Atafu Atoll, Tokelau Islands

Mar

P.M. We (a native boy and I) set out

3

12 snaptraps, baited with burnt coconut meat, on Fenuafoa Island. I shot an adult ♀ with a pistol. Her skull was ruined. She was T. 141-HF30-E17. She was not pg. nor lactating.



R.D. Kirkpatrick

P165

Rattus exulans

Atafu Atoll, Tokelau Islands

- Mar 3 Another adult ♀, killed in camp by the natives, was lactating. Four inguinal (cont) mammae were present and distended. She was not weighed or measured since her tail was missing and the ants had gotten to her.

After dark, two adults (RDK# 566 and 567) were collected in the edge of camp with a .22 pistol. #567 was pg. Both rats were very fat.

Many rats could have been collected on the small island where we camped.

The natives say that they do not eat rats.

- Mar 4 No rats were in the 12 snaptraps which had been baited with burnt coconut meat and set on the 3rd, even though rats were abundant in the area where the traps were set.

Christmas Atoll, Line Islands

- Mar 13 Several rats were observed on islands which support coconut palms. Rats were not seen on other islands.



R.D. Kirkpatrick

1965

Rattus exulans

Palmyra Atoll, Line Islands

Mar.

16

This heavily vegetated atoll  
supports many coconut palms  
and many Polynesian rats.



R.D. Kirkpatrick

1964

Sterna fuscata

Sand Island, Johnston Atoll, Pacific

Dec. Noon. An adult, band # 753-92350  
14 and an orange streamer, was picked up.  
It had injured itself on a guywire  
but could still fly.

Dec. Three unbanded adults with wings  
5 broken from flying into guywires were  
found and killed.

Dec. One unbanded adult was found  
6 (and killed) after it hit a guywire.

Dec. An adult, band # 753-95229, was  
7 killed after it was found with a broken  
wing. Its blood, 6 cc., was taken.

Dec. A.M. A broken-winged adult was  
10 found near the barracks. Blood  
was taken from it.

Dec. A.M. Two broken-winged adult Sooty  
19 Terns had their blood taken. One  
was band # 753-96578.

Dec. A.M. Three broken-winged adults  
20 were found and their blood was taken.  
One carried band # 753-30941.



R.D. Kirkpatrick

1964

Sterna fuscata

Sand Island, Johnston Atoll, Pacific

Dec.

21 P.M. Three adults that had broken a wing on Loran tower guywires had their blood taken. One carried band # 753-72084.

An unbanded adult was frozen as a specimen

1965

Pacific Ocean south of Galu

Jan.

25

P.M. A flock of 7 were observed flying NW rather low (6 to 10 feet up). A single bird was later observed flying in the same direction.



R.D. Kirkpatrick

1965

Sterna fuscata

Enderbury Island, Phoenix Islands, Pacific

Feb.

13

5:30 to 9 P.M. Sooty terns were banded by all six of us working in a nesting colony just north of the guano pile on the west side of the island. The colony contained many eggs, many hatching eggs and young up to the age  $\frac{1}{2}$  grown.

Hermit crabs are very abundant in and around the tern colony. Many of the crabs stay, during the day, in burrows in the guano pile.

While we were in the colony I observed 2 crabs eating the contents of an egg, 1 crab " " " " " " , and 1 to 3 crabs at various locations eating living or freshly killed (by the crabs) chicks.

Our disturbance of the colony may (or may not) have caused the adults to leave the eggs and chicks unprotected while the crabs preyed on them.

Feb.

16

5 P.M. to 6 P.M. Five of us netted and banded birds in the two colonies SE of the house (as we had done the evening of Feb. 15).

The birds were very jumpy and difficult to net. Continued disturbance



R.D. Kirkpatrick

1965

Sterna fuscata

Enderbury Island, Phoenix Islands, Pacific

- Feb. seems to cause them to flush more  
16 readily and then stay away from their  
(cont) nests longer.

Eggs and very small young are in these 2 colonies. The disturbance in the colonies caused the young to crawl under the prostrate, fleshy-stemmed Portulaca.

Netted adults regurgitated rather fresh (and small) fish - up to 3" long. This indicates that the adults feed just prior to dusk.

Palmyra Atoll, Line Islands

- Mar. A nesting colony of 500,000 to one  
16 million birds is located on the abandoned WWII landing strip. This runway is in an area that had been forested and unsuited to Sooty Terns so this is a relatively new colony. The birds are still laying although some of the eggs have recently hatched.



R.D. Kirkpatrick

1964

Sterna lunata

Sand Island, Johnston Atoll, Pacific

Nov.

Midnight. Nineteen Gray-backed Terns were counted on the old pier near the islet. They were with Common Noddy Terns and were calling.

Nov.

Midnight. Dennis caught an adult 28 on the old pier. We placed it in the cage on the Mus grid.

Nov.

The adult caught last night was 29 banded with # 642-01171 and released.

Dec.

8:30 A.M. Not less than six adults 10 were observed with a flock of Common Noddies flying around near the old pier.

11 P.M. An estimated 35 birds were on the old pier.

1965

Jan. Several eggs were found on the islet just north of the old gun mount. 13 They are relatively large and are speckled blending into the background. Eggs are laid on the bare coral, no nesting material being used.



R.D. Kirkpatrick

1965

Sterna lunata

Canton Island, Phoenix Islands, South Pacific

Feb.

17

A nesting colony of 2,000± Gray-backed Terns was found along the road approx. 5 miles from the landing on the American side. Eggs were just hatching and none of the young appeared to be more than 2 or 3 days old.

It was noted, while we were netting (by means of long-handled landing nets) and banding them, that about 2% of the birds were Sooty Terns. No nesting Sootys, or Sootys on the ground, were noted.

Hilbertese natives live on the island and they apparently harvest the birds for food. A native bird-killing tool was found in the nesting colony. The tool consisted of a stick  $3\frac{1}{2}$ '-4' long with 2 strands of nylon fishing leader affixed to one end. The distal ends of the leaders were tied to a single cylindrical stone  $3\frac{1}{2}$ " long and 1" in diameter. This tool should be very efficient in knocking down the low-flying birds.



R.D. Kirkpatrick

1965

Sula leucogaster

Sand Island Johnston Atoll, Pacific

Jan

4

11 P.M. An immature Brown Booby was found on the north beach with a broken wing (from hitting a guywire). We killed it.

Pacific Ocean

Jan

25

AM Several adults were observed flying about and sitting on buoys as we cleared Pearl Harbor.



R.D. Kirkpatrick

1965

Sus scrofa

Fakaofu, Tokalan Islands

Feb.

26

I noticed a domestic hog in the village that weighed 45± lbs. It was very poor type, but may have been a typical Polynesian pig since it was much like pigs observed on Tutuila, Samoa.

Feb.

27

Our native guides informed me that many hogs are "kept" (they run loose) by the villagers for eating. They are fed fish bones and coconut meat but probably forage for most of their food. The pigs do not attack the village children.

Nukunono Atoll, Tokalan Islands

Feb.

28

15 to 20 pigs (up to 25 lb.) were observed in the village. They seem to be of superior stock that those seen on Tutuila, Samoa and on Fakaofu. Some were marked and shaped like Durocs and others looked like

Atafu Atoll, Tokalan Islands

Mar

3

Many domestic hogs are kept on an island adjacent to the village island. The villagers use the hogs as food.



CATALOGUE

R.D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific Ocean

Oct.

22 388 ♂ Mus musculus 147-77-18-12=10.2 gm.  
testis 4x6 mm <sup>skull, skin,</sup> eyeballs saved  
USNM Field # 25280

Oct. 23 389 ♂ Mus musculus 130-72-18-10=7.1 gm.  
testis ~~4x5 mm~~ 4x5.5 mm <sup>skull, skin,</sup> eyeballs saved  
USNM Field # 25281

24 390 ♀ Mus musculus 122-63-17-11=6.8 gm.  
ovary minute; skull, skin, eyeballs saved  
USNM Field # 25278

391 ♂ Mus musculus 120-59-17-11=6.4 gm.  
testis 4x7 mm; skull, skin, eyeballs saved  
USNM Field # 25283

26 392 ♂ Mus musculus 125-57-18-12=10.5 gm  
tip of tail missing; testis internal 4x5 mm  
skull, skin, eyeballs saved  
USNM Field # 25277

27 393 ♀ Mus musculus 145-76-16-11=10.7 gm.  
10 mammae (6 pectoral, 4 inguinal); not lactating;  
skull, skin, eyeballs saved  
USNM Field # 25284

394 ♂ Mus musculus 163-87-19-11=14.9 gm.  
testis 4x5 mm; skull, skin, eyeballs saved  
USNM Field # 25279

Johnston Island, Johnston Atoll, Pacific

28 395 ♂ Rattus 195-107-29-16=22.4 gm.

testis 3.5x5 mm.; skin, skin, ectoparasites saved  
collected by Lt. (jg) Richard Fleming, USNR  
USNM Field # 25276



R.D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific Ocean

Nov. 396 ♂ Mus musculus 167-87-20-12 = 15.4 gm.

1

testis 5x8 mm. in scrotum

skin, skull, eyeballs saved

USNM Field # 25282

Johnston Island, Johnston Atoll, Pacific Ocean

Nov. 397 ♀ Rattus

318-182-34-20 = 78.5 gm.

5

skin, skull saved

USNM Field # 25285

398 ♂ Rattus

289-157-34-20 = 54.5 gm.

skin only; testis 9x17 mm in scrotum

USNM Field # 25286

Sand Island, Johnston Atoll, Pacific Atoll

Nov. 399 ♀ Mus musculus 165-89-18-12 = 12.6 gm.

16

USNM Field # 25152; preserved as skin, skull;  
eyeballs saved; no molt; many ectoparasites  
(preserved); vulva non-perforate; no corpora  
lutea or embryo scars; teats evident

400 ♂ Mus musculus 129-68-16-10 = 7.3 gm.

USNM Field # 25153; skull and flat skin and  
eyeballs saved; ectoparasites preserved.  
testis 4 mm.

401 ♀ Mus musculus 164-89-19-12 = 12.7 gm.

USNM Field # 25154; skull, flat skin and  
eyeballs saved; vulva perforate; very  
few ectoparasites

402 ♂ Mus musculus 133-69-16-11 = 8 gm.

USNM Field # 25155; skull and eyeballs  
saved; testis 4 mm.; no molt; moderate  
number of ectoparasites.



R.D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific

- Nov. 412 ♀ Mus musculus 155-79-18-12 = 13.8 gm.  
16 USNM Field # 25165; flat skin, skull and  
(cont.) eyeballs saved
- 413 ♀ Mus musculus 121-60-16-11 = 6.5 gm  
USNM Field # 25166; flat skin, skull and  
eyeballs saved; immature
- 414 ♂ Mus musculus 134-75-18-11 = 6.7 gm  
USNM Field # 25167; flat skin, skull and  
eyeballs saved; testes (abdominal) - 2 mm.
- 415 ♂ Mus musculus 129-67-16-10 = 6.5 gm  
USNM Field # 25168; skull and eyeballs  
saved; testes (scrotal) - 4 mm.
- 416 ♂ Mus musculus 150-80-17-12 = 11.9 gm  
USNM Field # 25169; flat skin and skull  
and eyeballs saved; testes (scrotal) - 6 mm.
- 417 ♀ Mus musculus 150-78-17-12 = 9.3 gm.  
USNM Field # 25170; flat skin, skull and  
eyeballs saved; immature
- 418 ♂ Mus musculus 140-76-17-12 = 8.4 gm  
USNM Field # 25171; skull and eyeballs  
saved; testes (abdominal) - 2 mm.
- 419 ♀ Mus musculus 131-72-17-11 = 6.9 gm  
USNM Field # 25172; skull and eyeballs  
saved; immature
- Nov. 420 ♂ Mus musculus 131-67-16-9 = 6.4 gm  
17 USNM Field # 25173; flat skin, skull and  
eyeballs saved; testes (abdominal) - 2 mm.



R.D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific

- Nov. 421 ♀ Mus musculus 173-90-18-13 = 13.5 gm  
17 USNM Field # 25174; flat skin, skull and  
(cont.) eyeballs saved; 6 (3 on r, 3 on L) embryo scars
- 422 ♂ Mus musculus 165-92-18-13 = 13.4 gm  
USNM Field # 25175; flat skin, skull and  
eyeballs saved; testes (scrotal) - 6 mm.
- 423 ♀ Mus musculus 124-71-17-11 = 6 gm  
USNM Field # 25176; skull and eyeballs saved
- 424 ♂ Mus musculus 146-73-16-12 = 9.9 gm  
USNM Field # 25177; skull and eyeballs saved;  
testes (scrotal) - 5 mm.
- 425 ♂ Mus musculus 165-91-18-13 = 14.4 gm  
USNM Field # 25178; flat skin, skull and  
eyeballs saved; testes (scrotal) - 7 mm.
- 426 ♂ Mus musculus 138-76-17-11 = 6.4 gm.  
USNM Field # 25179; skull and eyeballs saved  
testes (scrotal) - 2 mm; immature
- 427 ♂ Mus musculus 155-85-17-12 = 9.9 gm.  
USNM Field # 25180; skull and eyeballs  
saved; testes (scrotal) - 4 mm
- 428 ♂ Mus musculus 135-73-17-11 = 7.3 gm  
USNM Field # 25181; skull and eyeballs  
saved; testes (scrotal) - 4 mm
- 429 ♀ Mus musculus 150-76-16-12 = 10.5 gm.  
USNM Field # 25182; flat skin, skull  
and eyeballs saved; 4 (4 on L, 0 on R) embryo  
scars



R. D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific Ocean

- No. 430 ♀ Mus musculus 151-82-17-12 = 10 gm.  
17 USNM Field # 25183; flat skin, skull  
(cont.) and eyeballs saved; no embryo scars
- 431 ♂ Mus musculus 160-84-17-12 = 10 gm  
USNM Field # 25184; skull and eyeballs  
saved; testes (scrotal) - 4 mm.
- 432 ♂ Mus musculus 164-83-18-12 = 14.8 gm.  
USNM Field # 25185; flat skin, skull,  
eyeballs saved; testes (scrotal) - 9 x 5 mm.
- 433 ♀ Mus musculus 175-93-19-14 = 15.9 gm  
USNM Field # 25186; flat skin, skull,  
eyeballs saved; no embryo scars
- 434 ♂ Mus musculus 157-81-17-14 = 12 gm  
USNM Field # 25187; flat skin, skull,  
eyeballs saved; testes (scrotal) - 3 x 5 mm
- 435 ♂ Mus musculus 136-75-17-12 = 7.6 gm  
USNM Field # 25188; flat skin, skull,  
eyeballs saved; testes (scrotal) - 2 x 1.5 mm
- 436 ♂ Mus musculus 163-88-18-13 = 12.2 gm  
USNM Field # 25189; skull and eye-  
balls saved; testes (scrotal) - 7 x 4 mm.
- 437 ♀ Mus musculus 170-91-18-14 = 14 gm  
USNM Field # 25190; skull and eyeballs  
saved; 10 (6 on L, 4 on R) embryo scars
- 438 ♂ Mus musculus 163-85-19-13 = 16.5 gm.  
USNM Field # 25191; flat skin, skull,  
eyeballs saved; testes (scrotal) - 8 x 4 mm.



R.D. Kirkpatrick

1964

Catalogue

Sand Island, Johnston Atoll, Pacific Ocean

- Nov. 439 ♀ Mus musculus 162-86-17-13 = 12.9 gm.  
17 USNM Field # 25192; flat skin, skull,  
(cont.) eyeballs saved; 15 (11 and 4) embryo scars  
440 ♀ Mus musculus 149-81-18-13 = 9.4 gm.  
USNM Field # 25193; skull, eyeballs  
saved; immature; no embryo scars  
Nov. 441 ♀ Mus musculus 162-83-18-12 = 15.4 gm.  
18 USNM Field # 25194; flat skin, skull,  
eyeballs saved; 17 (10 on L, 7 on R) embryo scars  
442 ♂ Mus musculus 147-82-18-11 = 9.0 gm  
USNM Field # 25195; flat skin, skull,  
eyeballs saved; testes (scrotal) - 3x8 mm.  
443 ♀ Mus musculus 151-80-18-12 = 11.3 gm.  
USNM Field # 25196; skull, eyeballs  
saved; no embryo scars  
444 ♂ Mus musculus 150-81-18-13 = 9.9 gm  
USNM Field # 25197; skull, eyeballs  
saved; testes (scrotal) - 3x7 mm.  
445 ♀ Mus musculus 136-71-17-11 = 7.8 gm  
USNM Field # 25198; skull, eyeballs  
saved; no embryo scars  
446 ♂ Mus musculus 150-84-16-12 = 9.8 gm  
USNM Field # 25199; skull, eyeballs  
saved; testes (scrotal) - 3x5 mm.  
447 ♂ Mus musculus 172-90-19-12 = 13.9 gm  
USNM Field # 25200; flat skin, skull,  
eyeballs saved; testes (scrotal) - 6x4 mm.



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Sand Island, Johnston Atoll, Pacific

Nov. 448 ♂ Mus musculus 173-100-20-13 = 15.5 gm

18 USNM Field # 25201; skull, eyeballs  
(cont.) saved; testes (scrotal) - 4x8 mm.

449 ♀ Mus musculus 155-78-17-13 = 13.4 gm.

USNM Field # 25202; skull, eyeballs  
saved; 15 (7 on L, 8 on R) embryo scars

450 ♀ Mus musculus 140-74-16-12 = 9.1 gm.

USNM Field # 25203; skull, eyeballs  
saved; no embryo scars

Johnston Island, Johnston Atoll, Pacific Ocean

Nov. 451 ♂ Rattus 395-204-39-23 = 189.5 gm.

17 testes 40x7 mm - scrotal; skin, skull saved

USNM Field # 25287

Sand Island, Johnston Atoll, Pacific Ocean

Dec. 452 ♂ Mus musculus 150-80-18-13 = 16.3 gm.

8 USNM Field # 25204; skull, eyeballs, stomach  
and flat skin saved; molt across shoulders  
and on belly; testis (scrotal) 7x4 mm. - no cauda  
epididymis tubules

453 ♂ Mus musculus 173-95-20-13 = 15.9 gm.

USNM Field # 25205; skull, eyeballs, flat  
skin saved; molt on shoulder and small of back;  
testis (abdominal) - 6x4 mm - no cauda  
epididymus tubules



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Sand Island, Johnston Atoll, Pacific

- Dec 454 ♂ Mus musculus 134-74-17-12 = 10.4 gm.  
8 USNM Field # 25206; skull, eyeballs, flat skin,  
(cont) stomach saved; testis (abdominal) 4x3 mm,  
no cauda epididymus tubules; molt  
across back and top of hips.
- 455 ♀ Mus musculus 152-81-17-12 = 12.8 gm  
USNM Field # 25207; skull, eyeballs, flat  
skin, stomach saved; molt on head,  
shoulders, one hip; ovary 3x1½ mm.
- 456 ♂ Mus musculus 138-73-18-10 = 9.5 gm.  
USNM Field # 25208; skull, eyeballs, flat  
skin, stomach saved; no molt; testis  
(abdominal) 5x3 mm; no cauda epididymus  
tubules
- 457 ♂ Mus musculus 142-78-16-11 = 12.1 gm.  
USNM Field # 25209; skull, eyeballs, flat  
skin, stomach saved; molt on head and one  
hip; testis (abdom.) 6x4 mm, no c. e. tubules
- 458 ♀ Mus musculus 164-89-17-12 = 14.4 gm.  
USNM Field # 25210; skull, eyeballs, flat skin,  
stomach saved; ovary 1x1 mm.
- 459 ♀ Mus musculus 128-67-17-10 = 7.9 mm.  
USNM Field # 25211; skull, eyeballs, flat skin,  
stomach saved; molt on belly, cheeks, and  
between eyes and on rump; ovary minute



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Sand Island, Johnston Atoll, Pacific Ocean

Dec. 460 ♀ Mus musculus 130-70-16-11 = 8.0 gm.  
8 USNM Field # 25212; skull, eyeballs, flat skin,  
(cont.) stomach saved; molt on neck and back;  
ovary minute.

461 ♀ Mus musculus 131-65-16-11 = 8.0 gm.  
USNM Field # 25213; skull, eyeballs, flat skin,  
stomach saved; molt on belly; ovary minute.

462 ♂ Mus musculus 127-68-17-10 = 7.8 gm.  
USNM Field # 25214; skull, eyeballs, flat  
skin, stomach saved; molt on all except belly;  
testis (abdominal) - 4x2, no c. e. tubules

463 ♂ Mus musculus 146-79-17-11 = 11.8 gm.  
USNM Field # 25215; skull, eyeballs, flat skin,  
stomach saved; molt on all except rump;  
testis (abdominal) 9x6 mm, no c. e. tubules

464 ♂ Mus musculus 128-69-16-11 = 8.3 gm.  
USNM Field # 25216; skull, eyeballs, flat skin,  
stomach saved; molt between eyes; testis  
(abdominal) - 3x4 mm., no c. e. tubules

465 ♂ Mus musculus 130-71-16-11 = 8.4 gm.  
USNM Field # 25217; skull, eyeballs, flat skin,  
stomach saved; molt on hind quarters; testis  
(scrotal) - 5x3 mm, no c. e. tubules

466 ♀ Mus musculus 125-68-16-11 = 7.2 gm.  
USNM Field # 25218; skull, eyeballs, flat  
skin saved; molt on lower back and  
hips; ovary minute



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Sand Island, Johnston Atoll, Pacific Ocean

Dec. 467 ♀ Mus musculus 138-71-17-11 = 9.0 gm.

8 USNM Field # 25219; skull, eyeballs, flat skin,  
(cont.) stomach saved; molt on shoulders and hips;  
ovary minute.

468 ♀ Mus musculus 140-75-17-11 = 7.5 gm.

USNM Field # 25220; skull, eyeballs, flat  
skin saved; no molt; ovary minute.

469 ♂ Mus musculus 147-77-17-12 = 12.9 gm.

USNM Field # 25221; skull, eyeballs, flat  
skin, stomach saved; molt on head, back  
of shoulders, around legs; testis (scrotal)-  
9x5 mm., c. e. tubules present

470 ♂ Mus musculus 144-76-17-11 = 9.7 gm.

USNM Field # 25222; skull, eyeballs, flat  
skin, stomach saved; no molt; testis  
(scrotal)-6x4 mm., c. e. tubules present

471 ♀ Mus musculus 157-85-17-12 = 14.5 gm.

USNM Field # 25223; skull, eyeballs,  
flat skin, stomach saved; molt on anterior  
back and head; ovary 4 mm.

472 ♀ Mus musculus 161-84-19-12 = 15.2 gm.

had 4 yg. in trap, ate 1, other 3 weighed total  
of 2.9 gm and measured 25 mm crown-rump;  
USNM Field # 25224; skull, eyeballs,  
flat skin, stomach saved; no molt;  
ovary 4 mm.



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Land Island, Johnston Atoll, Pacific Ocean

Dec. 473 ♀ Mus musculus 136-75-18-12 = 9.2 gm.  
9 USNM Field # 25225; skull, eyeballs, flat skin, stomach saved; molt between eyes; ovary 2 mm.

474 ♀ Mus musculus 147-76-18-13 = 10.7 gm.  
USNM Field # 25226; skull, eyeballs, flat skin, stomach saved; molt on sides and hind legs; ovary minute

475 ♀ Mus musculus 153-79-18-12 = 12.2 gm.  
USNM Field # 25227; skull, eyeballs, flat skin, stomach saved; molt on head and left shoulder; ovary minute.

476 ♂ Mus musculus 149-80-18-12 = 11.1 gm.  
USNM Field # 25228; skull, eyeballs, flat skin, stomach saved; molt on head; testes (scrotal) - 7x5 mm, c. e. tubules present

477 ♂ Mus musculus 143-75-17-12 = 12.0 gm.  
USNM Field # 25229; skull, eyeballs, flat skin, stomach saved; no molt; testis (scrotal) - 8x6 mm, c. e. tubules present

478 ♀ Mus musculus 111-59-16-11 = 4.7 gm.  
USNM Field # 25230; skull, eyeballs, flat skin saved; no molt; ovary minute

479 ♂ Mus musculus 150-82-16-12 = 11.1 gm.  
USNM Field # 25231; skull, eyeballs, flat skin, stomach saved; molt on side forward of left hip; testis (abdominal) - 6x4 mm, c. e. tubules present



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Sand Island, Johnston Atoll, Pacific Ocean

Dec 480 ♂ Mus musculus 163-88-19-12 = 12.9 gm.

9 USNM Field # 25232; skull, eyeballs, flat  
(cont) skin, stomach saved; molt on right shoulder;  
testis (abdominal) - 5x4 mm, no s. s. tubules

481 ♂ Mus musculus 153-82-17-12 = 12.5 gm.

USNM Field # 25233; skull, eyeballs, flat  
skin saved; no molt; testis (scrotal) -  
7x5 mm, s. s. tubules present

482 ♀ Mus musculus no measurements; 8.4 g.

USNM Field # 25234; skull, eyeballs, flat  
skin, stomach saved; molt across face,  
posterior back and hindquarters; ovary minute

483 ♀ Mus musculus 151-77-18-12 = 10.5 gm.

USNM Field # 25235; skull, eyeballs, flat  
skin, stomach saved; molt on posterior  
part of body; ovary 3x2 mm.

484 ♂ Mus musculus 142-79-17-11 = 7.7 gm.

USNM Field # 25236; skull, eyeballs, flat  
skin, stomach saved; no molt; testis  
(abdominal) - 4x2 mm, no s. s. tubules

485 ♂ Mus musculus 154-83-18-12 = 11.3 gm.

USNM Field # 25237; skull, eyeballs, flat  
skin, stomach saved; molt on tail and head;  
testis (abdominal) - 4x8 mm, s. s. tubules present

486 ♂ Mus musculus 158-87-18-11 = 9.5 gm.

USNM Field # 25238; skull, eyeballs, flat  
skin saved; no molt; testis (abdominal)  
5x3 mm, no s. s. tubules present



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Sand Island, Johnston Atoll, Pacific

Dec.

487 ♀ Mus musculus 157-82-18-12 = 14.1 gm.

9

(cont.) USNM Field # 25239; skull, eyeballs, flat skin saved; molt on hindquarters; ovary - 3 mm.

488 ♀ Mus musculus 164-88-18-12 = 13.5 gm.

USNM Field # 25240; skull, eyeballs, flat skin, stomach saved; no molt; ovary 4 mm.

489 ♂ Mus musculus 165-89-19-13 = 14.9 gm.

USNM Field # 25241; skull, eyeballs, flat skin, stomach saved; molt on posterior body; testis (scrotal) - 5 x 7 mm, c. e. tubules present

490 ♀ Mus musculus 131-70-17-12 = 7.1 gm.

USNM Field # 25242; skull, eyeballs, flat skin, stomach saved; molt on dorsal portion of posterior body; ovary 2 mm.

491 ♂ Mus musculus 137-75-18-12 = 8.9 gm.

USNM Field # 25243; skull, eyeballs, flat skin, stomach saved; no molt; testis (abdominal) 5 x 4 mm, no c. e. tubules present

492 ♀ Mus musculus 124-68-17-10 = 5.6 gm.

USNM Field # 25244; skull, eyeballs, flat skin, stomach saved; no molt; ovary minute

Dec.

10

493 ♂ Mus musculus 152-87-18-14 = 12.9 gm.

USNM Field # 25245; skull, eyeballs, flat skin, stomach saved; no molt; testis (abdominal) - 4 x 7 mm., c. e. tubules present



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Catalogue

Sand Island, Johnston Atoll, Pacific Ocean

- Dec 10 (cont.) 494 ♀ Mus musculus 146-76-17-12 = 11.2 gm.  
USNM Field # 25246; skull, eyeballs, flat skin, stomach saved; no molt; ovary 2x2 mm. 3 mirante embryos in right horn, 1 in left.
- 495 ♀ Mus musculus 151-79-18-12 = 10.2 gm.  
USNM Field # 25247; skull, eyeballs, flat skin, stomach saved; no molt; ovary 3x1 mm.
- 496 ♂ Mus musculus 142-79-18-13 = 12.3 gm.  
USNM Field # 25248; skull, eyeballs, flat skin, stomach saved; testis (abdominal) 6 mm, no c. e. tubules present
- 497 ♂ Mus musculus 147-77-17-12 = 12.7 gm.  
USNM Field # 25249; skull, eyeballs, flat skin, stomach saved; testis (scrotal) 7 mm, no c. e. tubules present

Johnston Island, Johnston Atoll, Pacific

- Dec. 23 498 ♀ Mus musculus 140-71-16-12 = 12.2 gm.  
USNM Field # 25288; ovary 4 mm.; 5 embryos 11 mm crown-rump
- 499 ♀ Mus musculus 155-81-18-12 = 16.5 gm.  
USNM Field # 25289; 6 embryos, 15 mm crown-rump.; ovary 4 mm.
- 500 ♀ Mus musculus 141-69-15-12 = 11.7 gm.  
USNM Field # 25290; ovary 4 mm.  
Lactated recently



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Catalogue

Johnston Island, Johnston Atoll, Pacific Ocean

Nov. ~~5~~

17 501♂ Rattus

264-151-34-21 = 42.1 gm.

USNM Field # 25291; testis 15 x 7 mm (scrotal)

skull only

Dec. 502 ♀ Rattus

344-180-38-22 = 114.9 g

24

USNM # 25260; melanistic; not pregnant

Dec. 503 ♀ Rattus

347-189-37-21 = 109.5 g.

24

USNM # 25261; not pregnant

skinned by P. Lehner

1965 Sand Island, Johnston Atoll, Pacific

Jan. 504♂ Mus musculus 153-82-19-13 = 13.4 gm.

9

USNM Field # 25262; no molt (skin not saved)  
testis 9 mm; <sup>scrotal</sup> no c. e. tubules; ~~no~~ skull, stomach,  
eyeballs saved.

505♂ Mus musculus 157-86-20-12 = 11.4 gm.

USNM Field # 25263; molt across middle of  
back; testis (scrotal) - 9 mm.; no c. e. tubules;  
skull, stomach, eyeballs saved

506♂ Mus musculus bob-tailed HF 17; E 12 = 12.7 gm

USNM Field # 25264; no molt; testis (abdom.)

7 mm.; no c. e. tubules



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Sand Island, Johnston Atoll, Pacific

Jan. 507 ♂ Mus musculus 124-67-17-11-6.8 gm  
9  
(cont.) USNM Field #25265; molt on rump; testis (abdom.)  
6 mm.; no c. e. tubules; stomach not saved (full  
of bait); skull, skin, eyeballs saved

508 ♀ Mus musculus 151-78-18-13=16.4 gm.  
USNM Field #25266; molt on hips; 3 fetuses  
20 mm crown-rump; stomach empty (not saved);  
skull, eyeballs, skin saved

509 ♀ Mus musculus 152-80-18-13=12.8 gm.  
USNM Field #25267; molt on sides;  
ovary 3 mm; skin, skull, eyeballs,  
stomach saved

510 ♀ Mus musculus 148-77-17-13=12.4 gm.  
USNM Field #25268; molt across back;  
ovary 3 mm; skin, skull, eyeballs,  
stomach saved

511 ♀ Mus musculus 148-79-17-12=13.8 gm  
USNM Field #25269; molt on right side;  
6 fetuses (2 on R, 4 on L) 12 mm crown-rump;  
stomach empty (not saved); skull,  
eyeballs, skin saved



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Sand Island, Johnston Atoll, Pacific

Jan 512 ♂ Mus musculus  $\frac{150-81-19-13}{137-72-18-12} = 13.9 \text{ gm}$

9  
(cont) USNM Field # 25270; molt on head; testis (abdominal) 8 mm; no c. e. tubules; stomach not saved; skull, eyeballs, skin saved

513 ♂ Mus ~~musculus~~ musculus  $\frac{155-82-19-13}{150-81-19-13} = 13.7 \text{ gm}$

USNM Field # 25271; molt on shoulders and back; testis (abdominal) 6 mm; no c. e. tubules; skull, skin, eyeballs saved

514 ♂ Mus musculus  $\frac{140-71-17-12}{153-82-19-13} = 12.2 \text{ gm}$

USNM Field # 25272; molt on head; testis (abdominal) 7 mm; no c. e. tubules; stomach not saved; skull, skin, eyeballs saved

515 ♀ Mus musculus  $137-72-18-12 = 9.8 \text{ gm}$

USNM Field # 25273; molt on belly and one shoulder; ovary minute; stomach not saved; skull, skin, eyeballs saved

516 ♀ Mus musculus  $127-70-18-12 = 7.8 \text{ gm}$

USNM Field # 25274; molt around tail; ovary minute; stomach not saved; skull, skin, eyeballs saved

Jan 517 ♂ Mus musculus  $151-79-19-12 = 12.2 \text{ gm}$

10 USNM Field # 25275; molt on back of head; testis (abdominal) 8 mm; no c. e. tubules; stomach, eyeballs, skull saved



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Sand Island, Johnston Atoll, Pacific

Jan 518 ♂ Mus musculus 153-78-20-12 = 13.8 gm.  
10 USNM Field # 25292; no molt, skin discarded;  
(cont.) testis (abdominal) 7 mm; c. e. tubules present;  
stomach, eyeballs, skull saved

519 ♂ Mus musculus 144-78-18-13 = 11.2 gm.  
USNM Field # 25293; molt on shoulders and hips;  
testis (abdominal) 11 mm; no c. e. tubules;  
skull, eyeballs, stomach saved

520 ♂ Mus musculus <sup>tip of tail missing</sup> ~~HF 19~~ HF 19; E13 = 13.8 gm  
USNM Field # 25294; no molt, skin discarded  
testis (scrotal) 9 mm; c. e. tubules present; stomach  
empty, not saved; eyeballs, skull saved

521 ♀ Mus musculus 148-75-18-13 = 12.3 gm.  
USNM Field # 25295; molt above hind hips;  
~~testis (abdominal)~~ ovary 2 mm; stomach, skull,  
eyeballs saved

522 ♀ Mus musculus 139-71-18-12 = 10.9 gm.  
USNM Field # 25296; molt on head and back;  
ovary minute; stomach, skull, eyeballs  
saved

523 ♂ Mus musculus 172-90-20-15 = 16.6 gm.  
USNM Field # 25297; no molt, skin discarded;  
testis (scrotal) 9 mm; c. e. tubules present;  
skull, eyeballs, stomach saved



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Sand Island, Johnston Atoll, Pacific

- Jan. 10 (cont.) 524 ♂ Mus musculus 129-64-17-12 = 11.0 gm.  
USNM Field #25298; molt on left shoulder;  
testis (scrotal) 9 mm; c. e. tubules present;  
stomach empty, not saved; skull, skin,  
eyeballs saved
- 525 ♂ Mus musculus 133-69-18-12 = 10.5 gm.  
USNM Field #25299; no molt, skin discarded;  
testis (abdominal) 7 mm; c. e. tubules present;  
stomach, skull, eyeballs saved
- 526 ♀ Mus musculus 152-78-19-13 = 12.7 gm.  
USNM Field #25300; no molt, skin discarded;  
ovary 3 mm; stomach, skull, eyeballs saved
- 527 ♂ Mus musculus <sup>tip of tail missing</sup> ~~##~~ HF-18; E-13 = 14.3 gm.  
USNM Field #25301; no molt, skin discarded;  
testis (scrotal) 11 mm; c. e. tubules present;  
stomach empty, discarded; skull, eyeballs  
saved
- 528 ♀ Mus musculus 145-78-18-12 = 10.5 gm.  
USNM Field #25302; molt on hips and lower  
back; ovary 2 mm.; stomach not saved;  
skin, skull, eyeballs saved
- 529 ♀ Mus musculus 148-78-17-13 = 11.8 gm.  
USNM Field #25303; no molt, skin discarded;  
ovary 4 mm.; stomach not saved; skull,  
eyeballs saved



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Sand Island, Johnston Atoll, Pacific

Jan  
11

530 ♀ Mus musculus 149-73-18-13=15.0 gm.

USNM Field # 25304; no molt, skin discarded;  
3 fetuses (2 in R, 1 in L) 14 mm crown-rump; stomach,  
skull, eyeballs saved

531 ♀ Mus musculus 172-90-20-14=17.7 gm.

USNM Field # 25305; molt on lower back and hips;  
lactating; ovary 3 mm; stomach empty, not saved;  
skull, skin, eyeballs saved

532 ♀ Mus musculus 161-80-19-13=14.9 gm.

USNM Field # 25306; molt on left shoulder and  
posterior part of body; ovary 5 mm.; skin,  
skull, stomach, eyeballs saved

533 ♂ Mus musculus 152-82-17-13=13.1 gm

USNM Field # 25307; no molt, skin discarded;  
testis (scrotal) 9 mm; c. e. tubules present;  
stomach not saved; skull, eyeballs saved

534 ♂ Mus musculus 137-70-17-12=10.4 gm.

USNM Field # 25308; no molt, skin discarded;  
testis (scrotal) 9 mm; c. e. tubules present;  
stomach not saved; skull, eyeballs saved



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Jan. 535 ♂ Mus. musculus 160-84-20-13 = 14.8 gm  
11 USNM Field # 25309; no molt, skin discarded  
(cont.) testis (scrotal) 9 mm; c. e. tubules present;  
skull, stomach, eyeballs saved

536 ♂ Mus. musculus 160-81-20-14 = 16.6 gm.  
USNM Field # 25310; molt on posterior body;  
testis (scrotal) 11 mm; c. e. tubules present;  
stomach, skull, eyeballs, skin saved

537 ♀ Mus. musculus 165-89-19-14 = 15.0 gm.  
USNM Field # 25311; no molt, skin discarded;  
ovary 4 mm.; stomach, skull, eyeballs saved

538 ♂ Mus. musculus 147-75-17-12 = 13.3 gm  
USNM Field # 25312; no molt, skin discarded  
testis (abdominal) 8 mm; no c. e. tubules present;  
stomach, skull, eyeballs saved

539 ♂ Mus. musculus 152-82-19-12 = 12.0 gm.  
USNM Field # 25313; no molt, skin discarded;  
testis (scrotal) 8 mm; no c. e. tubules present;  
stomach, skull, eyeballs saved

540 ♀ Mus. musculus 151-82-18-12 = 11.5 gm.  
USNM Field # 25314; no molt, skin discarded;  
6 fetuses (3 in R, 3 in L) 5 mm crown-rump;  
stomach not saved; skull, eyeballs saved



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Jan. 541 ♀ Mus musculus 152-82-19-13=11.4 gm.

11

(cont.)

USNM Field # 25315; molt on head, shoulders,  
and middle of back; ovary 3 mm; stomach not  
saved; skull, skin, eyeballs saved

542 ♂ Mus musculus 147-78-18-13=14.0 gm.

USNM Field # 25316; no molt, skin discarded;  
testis (scrotal) 10 mm; no e. e. tubules present  
stomach not saved; skull, eyeballs saved

543 ♂ Mus musculus 142-76-18-13=11.5 gm.

USNM Field # 25317; no molt, skin discarded;  
testis (scrotal) 10 mm; no e. e. tubules present;  
stomach not saved; skull, eyeballs saved

Jan. 544 ♀ Mus musculus 156-77-19-13=12.7 gm.

12

USNM Field # 25318; molt on shoulders and  
anterior back; ovary 3 mm; stomach, skull,  
eyeballs, skin saved

545 ♀ Mus musculus 151-83-19-12=10.8 gm.

USNM Field # 25319; no molt, skin discarded;  
ovary 3 mm; 6 fetuses (4 on R, 2 on L) 3 mm crown-rump;  
stomach not saved; skull, eyeballs saved

546 ♂ Mus musculus 140-78-17-12=9.2 gm.

USNM Field # 25320; no molt, skin discarded;  
testis (scrotal) 9 mm; e. e. tubules present;  
stomach not saved; skull, eyeballs saved



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Sand Island, Johnston Atoll, Pacific

Jan. 547 ♂ Mus musculus 147-78-17-12 = 13.6 gm.

12

(cont.)

USNM Field # 25321; no molt, skin discarded;  
testis (scrotal) 8 mm; c. e. tubules not present;  
stomach not saved; skull, eyeballs saved

548 ♂ Mus musculus 160-79-19-13 = 16.6 gm

USNM Field # 25322; no molt, skin discarded  
testis (scrotal) 9 mm; c. e. tubules present;  
stomach, skull, eyeballs saved



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Catalog

Baker Island, mid-Pacific

Feb. 549 ♂ Mus

142-72-17-13 = 9.7 gm.

4

USNM Field #5110; testis (scrotal) 8 mm.

550 ♂ Mus

145-74-18-13 = 9.9 gm.

USNM Field #5111; testis (scrotal) 8 mm.

551 ♀ Mus

130-71-18-12 = 8.7 gm.

USNM Field #5112; ovary minute; not pg.

552 ♂ Mus

145-74-18-13

USNM Field #5151; testis (scrotal) 7 mm.

skull only saved

553 ♂ Mus

150-75-17-12

USNM Field #5152; testis (scrotal) 9 mm.

skull only saved

554 ♀ Mus

127-66-17-12

USNM Field #5153; ovary minute; not pg.

skull only saved

Hull Island, Phoenix Islands, Pacific

Feb. 555 ? Canis familiaris

9

USNM Field #5154; skull only saved

collected by R.W. Merrill

556 ? Felis domestica

USNM Field #5155; skull only saved

collected by R.W. Merrill



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Catalog

Birnie Island, Phoenix Islands, Pacific

Feb. 557 ♂ Rattus exulans 273-137-28-18

10

USNM Field # 5122; testis (scrotal) 20x12 mm.

558 ♂ Rattus exulans 273-139-29-17

USNM Field # 5123; testis (scrotal) 21x12 mm

skull only saved

Matua, Tutuila, American Samoa

Feb. 559 ♂ Calallanus 60-18-9-14-t. 5-f. a. 47 = 7.0 gm.

23

USNM Field # 5276; preserved in 10% formalin

Feb. Viatoa, Tutuila, American Samoa

24 560 ♂ Pteropus

205-0-40-20-f. a. 145 = 376 gm.

USNM Field # 5147; skin and skull saved

Paleo<sup>Island</sup>, Fakaofo Atoll, Tokelau Islands

Feb. 561 ♂ Rattus exulans 297-155-29-18 = 76.1 gm.

27

USNM Field # 5274

testis 20x10 mm. (scrotal)

562 ♀ Rattus exulans 276-144-29-18 = 60.2 gm.

USNM Field # 5273



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Catalogue

Haumagalu Island, Nukunono Atoll, Tokelau Is.

Mar. 563 ♂ Rattus exulans 295-152-31-20=90 gm. (scrotal)  
1 USNM Field #5205; testis 22x12 mm.

564 ♀ Rattus exulans 273-146-29-18=69.0 gm.  
USNM Field #5206; lactating

Tokelau Island, Nukunono Atoll, Tokelau Islands

565 Sus scrofa part of mandible only  
USNM Field #5207

Atafu Atoll, Tokelau Islands

Mar. 566 ♀ Rattus exulans 274-132-31-20=92.5 gm.  
3 USNM Field #5226; 2 pr. pectoral mammae  
tip of tail missing??

567 ♀ Rattus exulans 316-156-30-20=104.7 gm.  
USNM Field #5227; pg., 4 embryos (3L, 1R) 10 mm  
crown-rump

Matua, Tutuila, American Samoa

Feb. 568 ♀ Emballonura 64-19-9-13-tr. 6-f.a. 49  
23 USNM Field #5277; preserved in 10% formalin  
collected by L. Huber and R. Merrill

569 ♂ Emballonura 51-13-7-9-tr. 4-f.a. 35  
USNM Field #5278; preserved in 10% formalin  
collected by L. Huber and R. Merrill



R.D. Kirkpatrick

1965

Catalog

Matun, Tutuila, American Samoa

Feb. 570 ♀ Emballonura

83-19-9-13-t.5-f.a.48

23

USNM Field #5279; preserved in 10% formalin  
collected by L. Huber and R. Merrill

Viatoqa, Tutuila, American Samoa

Feb. 571 ♀ Pteropus

208-0-39-26-f.a.128 = 416.2 gm

24

USNM Field #5280; preserved in 10% formalin

Matun, Tutuila, American Samoa

Feb. 572 ♀ Emballonura

54-12-9-12-t.4-f.a.35

23

USNM Field #5275; preserved in 10% formalin  
collected by L. Huber and R. Merrill